

THE JOURNAL OF MEDICAL EDUCATION

OFFICIAL PUBLICATION OF
THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES



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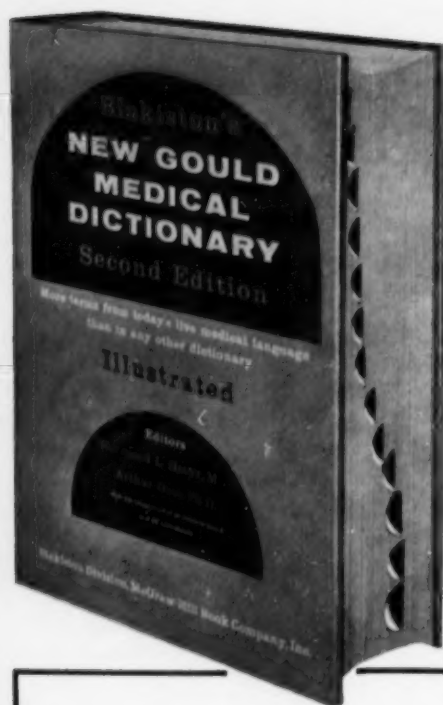
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- An Orientation Course in the History of Medicine.....George Rosen**
- Role and Responsibilities of a Department of Anesthesia
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The Journal of MEDICAL EDUCATION



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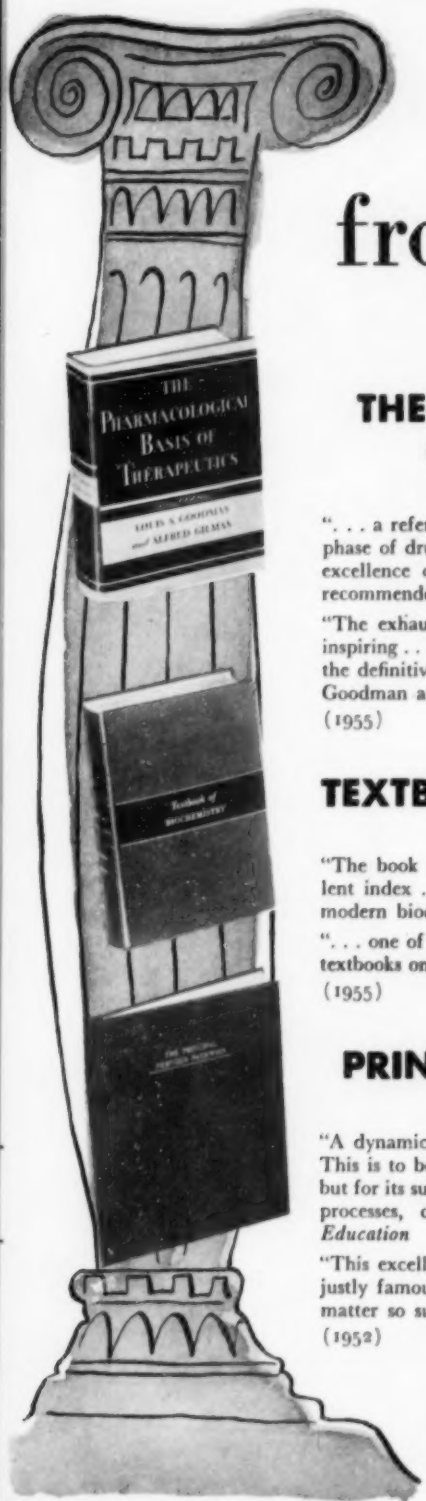
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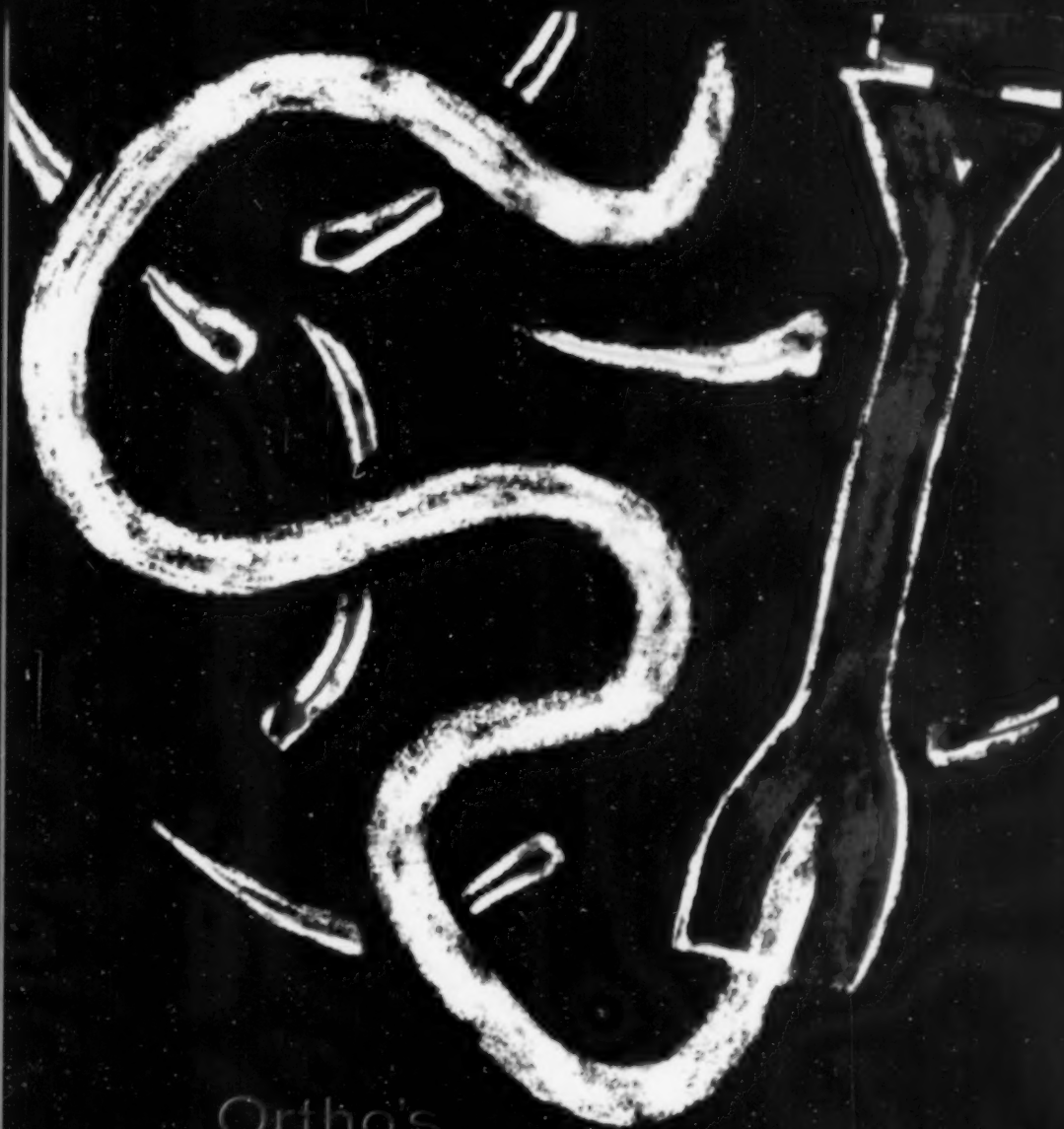


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College of American Pathologists—Oct. 6-13; Drake Hotel, Chicago, Illinois.

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The World Medical Association—October 9-15; Havana, Cuba

Annual Meeting of the National Tuberculosis Association and the American Trudeau Society—May 21-24, 1957; Hotel Statler, New York, N.Y.

American Heart Association Annual Meeting and Scientific Sessions—Oct. 27-31; Cincinnati, O.

International Congress of Neurological Sciences—July 21-28, 1957; Brussels, Belgium

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Chas. Pfizer & Co., Inc.	XIII
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OCTOBER 1956, VOL. 31, NO. 10

XIII



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to

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*The American Foundation: Medical Research:
A Midcentury Survey, Boston, Little, Brown
and Company, 1955, vol. 1, p. XXXI.

***Ibid.*, p. 600.

Teaching and Research in Clinical Physiology at the Caroline Hospital, Stockholm

TORGNY SJOSTRAND

THE RAPID DEVELOPMENTS in medicine during the past decades are due principally to advances made in the basic research in biochemistry, bacteriology and physiology. The greater the rate of development, the more intense the need of direct collaboration between clinical research and teaching on the one hand, and medical basic research on the other. Such a collaboration has for several years been established concerning chemistry and bacteriology at the large hospitals. In order to facilitate the application also of physiological methods in practical medicine as well as in clinical research, a central laboratory for clinical physiology has been organized at the Caroline hospital in Stockholm. This department has also several tasks relating to medical teaching.

Diagnostic services

The majority of diagnostic examinations by means of physiological methods are concentrated in the clinical physiological laboratory. Thus, the following investigations are carried out there for practically the

entire hospital; electrocardiography, phonocardiography, heart function tests, heart catheterization, blood volume determinations, spirometry, ventilation analysis at rest and during exercise, determination of the diffusion capacity of the lungs, estimation of the basal metabolism, blood gas analyses, renal function tests, renal vein catheterization and portal pressure determinations.

Services for clinical research

The laboratory constitutes a center of physiological research on clinical and pathological problems. It has special equipment for scientific investigations. The staff is trained to carry out different physiological and chemical methods, apart from those of routine medical care. The physicians employed at the laboratory act also as consultants in planning and executing scientific investigations at the various hospital departments.

Since 1942 a number of different research projects have been carried out in the laboratory by colleagues in the different clinical departments under the guidance of the head of the laboratory. In order to exemplify the variety of problems and methods

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adapted the following projects may be mentioned: the effect of changes in body position on circulation and respiration under different kinds of anesthesia (animal experiments), cardiac output and the pressures in the central vessels during preoperative medication, different kinds of anesthesia and the postoperative stage, the change in blood volume after abdominal operations, the tissue localization of certain sulfonamides and their diffusion through the mucous membranes, the blood volume in polycythemia before and after treatment with P^{32} , analysis of the function of the lungs in patients subjected to tracheotomy, the effect of artificial respiration on circulation, the O_2 -dissociation of hemoglobin in blood stored for transfusions, the physiological and pathological variation in the roentgenological heart volume, apparatus and technique for dialysis of blood in vivo (artificial kidney).

The laboratory has also carried out its own research projects comprising, *inter alia*, methodological problems, such as methods for determining the carbon monoxide content in gas samples and blood, determination of the total hemoglobin content and blood volume, determination of the physical working capacity, direct registration of arterial pressure at rest and during work, determination of intravital hemolysis, and the diffusion capacity of the lungs.

Teaching at the laboratory

In a forthcoming reorganization of medical education, special courses in clinical physiology will be introduced at the medical schools in Sweden. They involve a course of lectures on the clinical physiological investigations and their patho-physiological basis. The students will also carry out laboratory work comprising ECG re-

cordings with different leads, estimation of the basal metabolism, functional tests of the heart and lungs, spirometry and blood volume determinations. In the course of a week, each one of the students has to follow the work at the laboratory in connection with the course in internal medicine. The professor in clinical physiology shall take part in clinical conferences in the departments of internal medicine and surgery, thereby contributing towards an elucidation of clinical problems from a physiological point of view.

The training of specialists in clinical physiology is committed to the laboratory. Clinical physiological laboratories are being planned at the large hospitals in Sweden. In addition, it is possible for doctors, specializing in internal medicine, to obtain a supplementary training in clinical physiology at the laboratory. The aim is, moreover, to provide future facilities at the laboratory for anesthesiologists, rehabilitation doctors, and other specialists, in order to give them some practical training in the clinical physiological investigation methods.

The educational tasks of the laboratory include also the training of nurses and medical technologists in clinical physiology. The demand for technologists in this field is at present great, both in the planned clinical physiological laboratories and in special laboratories for electrocardiography, heart catheterization and basal metabolism.

Organization of the laboratory

The laboratory at present covers an area of about 700 m² but will shortly double that space. Such an expansion has been necessary to keep pace with the rapid increase in the laboratory work. In 1942, the number

of investigations totalled about 9,250, in 1955 the total number was 89,150. The number of investigations has annually increased by, on an average, 12 per cent.

The routine and research work requires a large staff that must be constantly increased to manage the increasing amount of investigations. The head of the laboratory has hitherto held a position corresponding to that of associate professor at the Caroline institute while acting, at the same time, as head physician at the Caroline hospital. This year he has gotten the position of a full professor at the institute. His special training has been acquired principally at theoretical physiological institutions though he has also worked for half a year as an intern at a department of internal medicine. In order to obtain, as far as possible, an all-round physiological training he has performed physiological research at five physiological departments in four different countries. Thus, his education comprises research work at laboratories with special regard to respiration, circulation, neurophysiology, muscle physiology and humoral transmitter substances. This many-sided physiological training was a prerequisite for the development of the laboratory to a clinical routine and research laboratory, with resources to meet the demands of the entire hospital for physiological investigations. This may be worth noting at a time when scientific specialization has been carried rather too far.

Three physicians are employed as assistants in the laboratory. These assistants should have a theoretical physiological training of at least two years. Further, they should have worked for a short time at a department of internal medicine.

The rest of the staff comprises six

nurses, one engineer, 12 technologists with an elementary engineer's or similar education, a number of medical attendants and office personnel.

Advantages of a clinical physiological central laboratory

At the large hospitals the clinical physiological investigations are, as a rule, referred to several smaller laboratories which are often connected with the departments of internal medicine or surgery, specialized in cardiology, diseases of metabolism, or thoracic surgery. These laboratories are managed by the head of the department of internal medicine or surgery, or by a consultant physician. However, such an organization has certain drawbacks. Often the laboratories have inadequate equipment for more extensive research, and the staff is too small to be kept constantly trained in the diverse methods that may come in question. Also the laboratory chief often lacks sufficient theoretical training on the subject concerned, and, generally, can devote but a small part of his time to the laboratory. The system is, moreover, unsatisfactory as regards the teaching seeing that it has either to be administered by teachers in internal medicine or surgery who lack full competence, or must be divided among several consultant doctors who do not comprehend the subject as a whole. Nor does the organization provide adequate training for specialists and medical technologists in the branch in question.

The above-mentioned drawbacks do not apply to the establishment of a central laboratory serving the purposes of the entire hospital. In this way a more complete equipment can be obtained and a larger staff placed at disposal for carrying out the great variety of investigations required.

Problems that may turn up in the course of research will thus be less dependent on equipment and staff. The head and his co-workers can be selected among applicants of higher merit and obtain salaries for full-time service. The teaching will comprehend the whole subject and be administered by teachers with a theoretical physiological education. Teaching in clinical and pathological physiology can also be connected with the preclinical courses in physiology.

The organization of a clinical physiological department has of course met with some resistance. The opposition has come principally from the colleagues in the department of internal medicine who have been afraid of being deprived of an important and interesting part of their work. However, a well organized laboratory as well as available specialists in physiology have been found to involve advantages even to them, more than outweighing the disadvantages. Furthermore, the technique in physiological investigations has nowadays become fairly complicated and the supervision and training of subordinate laboratory personnel takes so much time that the clinicians have come to realize that they can no longer pursue this work in a satis-

factory manner.

Future development

The laboratory can as yet be regarded as a first step. As mentioned above, in a few years the laboratory will have doubled its area. That will make it possible for new investigations to be applied and permit a widening of the scope of research. It has also been found desirable to make a separation of the research tasks of the laboratory in pathological physiology and clinical physiology and assigning it to two research institutes within the hospital grounds. The clinical physiological laboratory would then mainly concentrate its work on applying the physiological technique to diagnostics. The aim of the pathological physiological laboratory would be to study the pathological disturbances in the various functions of the body. Special training would be desirable also in pathological physiology in connection with the patho-anatomical education, as well as with the courses in internal medicine and surgery. An essential part of the experimental clinical research could thus be referred to well equipped physiological laboratories. Such a development would imply that the attainments in physiology would be effectively utilized in clinical research and teaching.

Enseñanza e investigación de Fisiología clínica en el Caroline Hospital de Estocolmo

Este artículo trata de las funciones del laboratorio central de Fisiología clínica en el *Caroline Hospital* de Estocolmo (Suecia), que ha sido organizado con el fin de facilitar la aplicación de los métodos fisiológicos a la Medicina práctica y a la investigación clínica, y el cual desempeña, además, un papel en la enseñanza. El laboratorio lleva a cabo servicios diagnósticos para todos los Departamentos del Hospital y constituye un centro de investigación fisiológica sobre problemas clí-

cos y patológicos. Tiene equipo especial para las investigaciones científicas, y su personal está capacitado para aplicar los métodos fisiológicos y químicos más especializados. El Jefe del laboratorio. (Profesor de Medicina del *Caroline Institute*) actúa como consejero en el planeamiento y ejecución de las investigaciones científicas de los varios Departamentos del Hospital. El laboratorio ha realizado también sus propios proyectos, que incluyen, *inter alia*, la investigación de problemas metodológicos. Después de una próxima reorganización de la Educación Médica en Suecia, cursos especiales en Fisiología clínica serán introducidos en los Colegios de

Medicina, los cuales comprenderán un curso de conferencias sobre investigaciones fisiológicas y sus bases fisiopatológicas, así como trabajos de laboratorio, en conexión con los cursos de Medicina interna. El Profesor de Fisiología clínica tomará parte en los seminarios clínicos de ese Departamento y también del de Cirugía, con lo cual contribuirá a una elucidación de los problemas clínicos desde el punto de vista fisiológico. Por otro lado, está a cargo del laboratorio la instrucción para los especialistas en Fisiología clí-

nica, y los médicos que practican la Medicina interna pueden allí obtener instrucción suplementaria en Fisiología clínica. En el futuro, el laboratorio tiene el propósito de proporcionar facilidades para anestesiólogos y otros especialistas que deseen práctica en los últimos métodos clínicos de la Fisiología.

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Separatas de este artículo, en español, podrán obtenerse si son solicitadas por un minimum de 25 lectores.

New Armed Forces Medical Plan

The Selective Service System and the Department of Defense have developed a program to permit physicians who are liable for military service to be commissioned well in advance of the time they will be required to serve, and to permit successful applicants to be deferred for residency training in specialties required by the Armed Forces. Participants must be 1956 graduates of an approved American or Canadian medical school liable for two years of military service and willing to accept a Reserve commission in either the Army, Navy or Air Force. Correspondence concerning this matter should be addressed to the military department to which the applicant has been allocated.

An Orientation Course in the History of Medicine

GEORGE ROSEN

THE TEACHING of medical history has been considered from a number of different viewpoints. Some have advocated the Oslerian approach, that is, integrating historical knowledge with a specific medical subject, whether it be bacteriology, surgery or dermatology. Others favor an approach in terms of the great figures in medicine, and lay stress on the inspirational effect. Each of these standpoints undoubtedly has its values and limitations. The intent of this communication is to describe still another approach to the teaching of medical history which has been used in a course for first-year students. This course was given in 1954 to somewhat more than half the freshman class of the College of Physicians and Surgeons, Columbia University. The initial request for an orientation course came from the students. Attendance was voluntary and somewhat over 60 students came regularly. The course was given over six one-hour sessions. Information obtained by means of an unsigned questionnaire at the conclusion of the course indicated that it had been favorably received and that the students had been stimulated to read further on the subject. Indeed, the organization of a student society for medical history has been due in part at least, to this stimulus.

Basic premise

The basic premise upon which the

course was organized is that medicine is an integral element of society, of a social structure. This point of view is integrally linked with two other premises. In the first place, the various elements of a society are related to each other functionally, as parts of a total configuration. In other words, the social point of view emphasizes the element of interrelatedness in society. Secondly, to the structural concept of configuration should be linked the dynamic concept of history as process, with all that this implies in terms of genetic and causal relations. From this point of view the teacher of medical history must think of medicine as one of the relevant elements in the existence and behavior of a community, and keep in mind that this community moves and changes through time.

What then is the bearing of the societal point of view on the teaching of medical history? Just this. History, like any subject, does not come ready to serve in convenient packages. The student must be given some frame of reference, some pattern in terms of which facts can be related and ordered. As that well-known historical guide, *1066 and All That* reminds us: "History is not what you thought. It is what you can remember. All other history defeats itself."

By placing medicine in a social configuration, by showing the interrelationship of medicine with other aspects of the community, and by indicating the interactions that occur in time, the student can be given a

Dr. Rosen is professor of public health education at Columbia University College of Physicians and Surgeons.

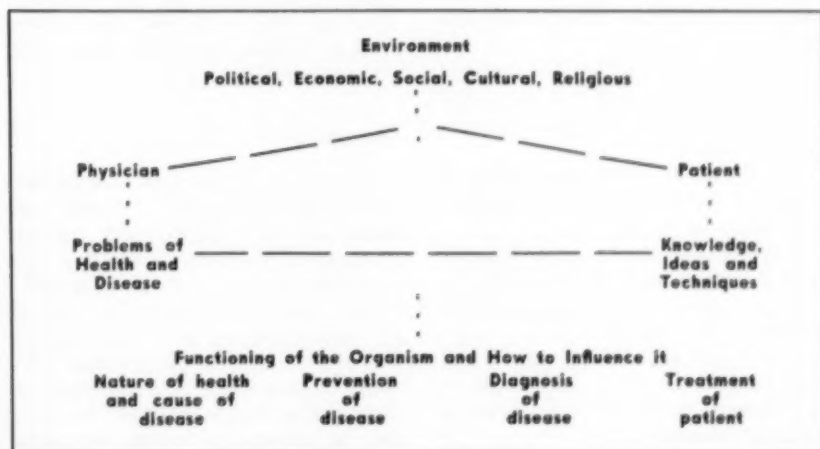
feeling of order and direction. This orientation enables the student to put what otherwise would be a chaotic mass of detail into a meaningful arrangement. Like bricks in an arch, the facts then wedge one another tight and stay put. From this angle, every element in medical history—patient, physician, theory, practice, research, prevention, diagnosis, treatment—can be brought into focus and presented to students in a meaningful way.

Content and method

How can this be done? What of method and content? It must be said at the outset that this approach cannot employ the Oslerian method. A formal course with a minimum of six to ten hours is required. Within such a course it is possible to introduce the student to the basic structural pattern for every society and historical period. The pattern that was used is shown below.

Within this framework the student can be introduced to a society or a period with its political, economic and cultural organization. With broad strokes the mood of a culture (in

the words of Thorkild Jacobsen) can be painted for him. The student can then learn to know the people with whom the healer at any period is concerned in terms of population structure, occupation, mode of life and other relevant facets. Linked to these subjects are the health problems of the population, as individuals and as a group, namely, the kind and prevalence of disease (endemic, epidemic, acute, chronic), problems of the public health and so forth. Problems of disease bring into focus the medical profession which has to cope with them. Here the teacher must deal with the structure of the profession, its education and organization, as well as its social position. Closely linked to the two preceding areas of discussion are medical theory and practice, as well as the advancement of medical knowledge. Similarly, attention must be given to nonmedical factors that influence medicine, and to medical developments that influence other sectors of society. Throughout, the teacher of medical history must keep in mind that these are on-going phases in a continuing process.



This approach is applied to various cultures and periods as follows:

1. Medicine in prehistory and among primitives.
2. Protohistoric cultures and archaic medicine: Egypt, Mesopotamia, the Indus Valley.
3. Greek and Roman medicine.
4. Medieval civilization and its medical problems: East and West.
5. The Renaissance: Medicine looks forward and backward.
6. The 17th and 18th centuries.
7. The emergence of modern medicine in the early 19th century.
8. Science, research and technical advance in medicine during the later 19th century.
9. Trends in medicine.
10. The bacteriological era and its consequences.

The case of the Greeks

Obviously, it is not possible to discuss this approach in detail, but it may be of interest to present in outline the approach to Greek medicine. These were the topics discussed:

1. What we know about early Greek civilization and culture, including health problems, from archeology and literature (Homer and Hesiod).
2. Greek society of the classical period. The city-state and its social structure. Nobles. Citizens. Foreigners. Slaves.
3. The Greek physician, chiefly a craftsman. Mode of practice (continued below in No. 7).
4. How did the Greeks conceive health and disease? Health a condition of balance. Four elements. Four humours. Four temperaments. Analogy to Ayurvedic three humours and five elements. Disease a natural process. *Vis medicatrix naturae*. Religious views of disease.

5. What diseases were known to the Greeks? Fevers, chest ailments, communicable diseases, mental and neurological conditions, wounds. Methods of diagnosis and therapy.

6. Community health problems: Endemics, epidemics and hygiene. Importance of hygiene. Limitations of hygienic program.

7. Mode of practice. Peripatetic physician. Relation of the emphasis on prognosis to mode of practice. Hippocratic oath.

8. Religious medicine. Cult of Asclepius. Incubation.

9. Decline of Greek states. Rise of Macedon. Spread of Greek culture. Hellenistic medicine.

Illustrative materials were taken from a variety of sources. Basic are the Greek medical texts. Among those employed were *Airs, Waters and Places*, *Prognosis I*, *Precepts*, the *Oath*, *Sacred Disease*, *Epidemics I and III*, *Diet* (all from the Hippocratic Corpus). In addition, nonmedical sources are drawn upon to tell the student what the Greeks were like. To understand Britain in the middle of the 19th century it is not enough to go to the history writers and the scientists; one must also go to Charles Dickens, Mrs. Gaskell and Anthony Trollope. For the Greeks this means Homer, Hesiod, Aeschylus, Plato and Aristophanes.

Conclusion

Clearly, this approach makes demands on the teacher, demands not made by the biographical, bibliographical or Oslerian approaches. The demands are those of (1) a knowledge of history in general as well as of medical history in particular; (2) a sincere desire to understand historical change and a recognition of the need to look deeper than the surface of events for trends and rela-

tions; and (3) an awareness of materials, medical as well as nonmedical to render plastic, concrete and colorful the general lines of development. When successfully practiced, however, the rewards in terms of student understanding are commensurately

greater. If the major objectives in teaching the history of medicine to students are to orient them in the here and now, and to show them how we got here, then the social approach is the method of choice.

Un curso de Historia de la Medicina

La enseñanza de la Historia de la Medicina ha sido enfocada desde varios puntos de vista: algunos prefieren el de Osler, que tiende a la integración de los conocimientos históricos con las materias médicas, por muy específicas que éstas sean; otros prefieren poner énfasis en las grandes figuras de la Historia Médica. En un curso para estudiantes de primer año, introducido en 1954 (a petición de los estudiantes mismos) en el Colegio de Medicina de la Columbia University, se toma otro punto de vista al considerar, en primer lugar, la Medicina como parte integral de la estructura social, y los varios elementos que forman nuestra sociedad, estrechamente relacionados entre sí; y, por otro lado, al considerar la Historia como un proceso dinámico, con todo cuanto esto implica en términos de relaciones causales. En el presente trabajo se describe en detalle el

contenido de dicho curso y los métodos empleados en su enseñanza, así como los problemas y dificultades que implica tal empresa. El autor llega a la conclusión de que en esta clase de enseñanza se exige del profesor más que en los cursos en que se sigue el método *osleriano*, o también el método biográfico-bibliográfico, pues el instructor debe poseer no sólo un sólido conocimiento de Historia general, sino que ha de hacer un sincero esfuerzo para interpretar los cambios históricos, y ha de reconocer la necesidad de descubrir, bajo la superficie de los acontecimientos, los factores esenciales. Y ha de poseer, además, la necesaria sensibilidad para seleccionar adecuadamente su material, así como talento para destacar, plástica y vivamente, las grandes líneas del desarrollo histórico.

* * *

Separatas de este artículo, en español, podrán obtenerse si son solicitadas por un mínimo de 25 lectores.

Role and Responsibilities of a Department of Anesthesia in a University Hospital

NICHOLAS M. GREENE

WITHIN THE PAST DECADE one of the newer medical specialties, anesthesiology, has undergone rapid growth. Considerable discussion and analysis have been devoted to the reasons for and the implications of this development, but there remains one highly important aspect of this new specialty that has not as yet received the attention and emphasis it deserves. It concerns the somewhat unique position and responsibilities of a department of anesthesia in a teaching-university environment.

Relative tardiness

The development of academic medical departments of anesthesia has been characterized, as with anesthesia as a whole, by its relative tardiness, for although anesthesia has now been used in medicine for 110 years, such departments did not start to appear on the scene until the last 15 years. When the specialty finally did start to attract competent physicians in large numbers, its development as a clinical specialty was, however, more rapid than its development as an integral and academic part of teaching university hospitals and medical schools. As a result, the policies and philosophies formulated on a national level by the specialty during its formative years were deter-

mined to a large extent by men with no or only tenuous university connections. These policies, and those which have been developed over the years, have thus frequently not only failed to be representative of anesthesiologists in university positions, but have on occasion actually appeared inimical to them. The end results of having a specialty the present size of anesthesia develop to such a large degree without benefit of the thoughts and opinions of those primarily interested in medical education have often proved embarrassing or distressing, or both, to medical schools and teaching hospitals. This might be considered to be partly their own fault, since many of these schools and hospitals often did little to encourage the specialty until recently, when they were presented with an already accomplished fact. Perhaps if these institutions had more actively aided and abetted the development of the specialty during its embryonic years, as some most certainly did, there would not at present be the occasional and unfortunate disparities between some of the aims and objectives of the various national anesthesia organizations on the one hand and those of medical educators and hospital administrators on the other hand.

Definition of role

A definition of the role and purposes of a department of anesthesia

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in a teaching-university environment is therefore in order. Not only are its special functions and attitudes often so little recognized on a national scale, but, of equal importance, the national attitudes of physicians as a whole and anesthesiologists in particular will become more and more based on concepts and ideas originating in major teaching institutions. The future direction of the development of anesthesia ultimately must and will, if the academic departments are to fulfill all their obligations, be influenced by these departments to a greater extent than has been the case in the past.

The functions of a modern academic department of anesthesia may conveniently be divided into three major categories, namely, although not necessarily in order of importance, the clinical, the research and the teaching. These three phases of the activities and interests of an academic department must be considered to be of equal importance, for unless they are, the department concerned cannot be considered well-rounded and meeting all of its obligations. The clinical responsibilities may be quite readily defined. Obviously one of the first is to provide service: i.e. surgical anesthesia when and where needed. This must be done on a 24-hours-a-day, seven-days-a-week basis, with sufficient staff so that no one person becomes so embroiled by clinical minutiae that he has no time or energy left for his other obligations. The qualitative aspects of the service provided are, however, even more important than the quantitative, and the department of anesthesia must assure the maximum safety of any and all patients undergoing surgery.

Patient's safety

This question of safety of the pa-

tient during anesthesia is a real and major problem. With the perfection of surgical techniques and the availability of antibiotics and blood banks, the surgical mortality from certain so-called "minor" procedures has dropped almost to zero, but patients still die as a result of anesthesia given for these operations. Patients do not die of a fractured radius or ulna, nor are hemorrhoids a particularly fatal surgical condition. But the anesthesia provided for the surgical correction of these conditions can and does occasionally prove fatal. Recent data obtained from the first statistically valid study to determine the anesthetic death rate would indicate that there is one death primarily due to anesthesia for every 1,600 anesthetics of all types administered.

This figure of 1:1600 brings the question of safety abruptly out of the realm of the academic when it is realized that approximately 7,000,000 anesthetics are given annually throughout this country. This figure of 1:1600 also indicates that in the course of any single anesthesiologist's experience there may be long periods without any fatalities. He may believe that because he has been using a given technique or anesthetic agent without having any trouble, the technique is safe. Clinical impressions are with us throughout all of medicine, but perhaps nowhere are they more prevalent, or more dangerous, than in anesthesia. Safety based on recognized physiologic and pharmacologic principles is not synonymous with the ability to "get away with" a calculated risk a certain number of times.

The anesthesia department in a teaching hospital has, therefore, the responsibility of constantly determining the safety of anesthetic techniques and agents being used. This must not be done on the basis of vague clinical

impressions, but it must instead be accomplished by the painstaking accumulation of accurately kept statistics. This involves, among other things, the careful review of all patients who have received any anesthesia at all and who have subsequently died. Even medical patients merely given a little local anesthesia on the ward must be included. This review must be made within 10 days of death and cannot be done by pulling old charts out of the record room. Although laborious and often embarrassing, such a review is the only way not only to determine one's mistakes and how to correct them but also to amass statistically significant data.

Operating conditions

The second most important clinical responsibility of a department of anesthesia is to provide the surgeon with operating conditions so that he can do the proposed surgery with dispatch, always, of course, consistent with the patient's maximum safety. The point is rather self-evident that patients do not come into the hospital purely for an anesthetic but instead come in for surgery, and it is up to the anesthesia department to provide conditions so it can be done. This is so obvious it does not bear further mention even though, parenthetically, it is amazing how often such a basic principle can be lost sight of one way or the other. That it is the duty of the anesthesia department to provide satisfactory operating conditions should, of course, never be taken to imply that anesthesia should be dictated by sheer surgical convenience, for the safety of the patient must always remain of paramount importance.

The third clinical responsibility of a department of anesthesia, and its

purely tertiary importance should be emphasized, is providing for the comfort of the patient. Comfort and safety, together with satisfactory operating conditions, often may be simultaneously achieved, but a sharp and clear differentiation should always be made between comfort and safety. A large percentage of preventable anesthetic deaths are the result of falling into the trap of giving an anesthetic that is comfortable and socially acceptable to the patient, rather than the one which is safest.

At the same time that the department of anesthesia is fulfilling the above clinical requirements, it must be doing so in a fashion that fits in with the activities and responsibilities of the other medical services and departments of the hospital. A department of anesthesia is one of many departments in a hospital and medical school, and its obligations to the patient and the rest of the medical community in which it functions are best carried out on the basis that it provides a consultative medical service. To use a trite, but nonetheless apt, analogy, there can be only one captain of a ship. There can be only one person in charge of a surgical patient, and that is the surgeon. He can and should call in consultants as required: cardiologists, anesthesiologists, radiologists, neurologists and others. But the ultimate responsibility for decisions rests with him, for only in this way can confusion, often to the detriment of the patient, be avoided. During the actual operation, the surgeon should, of course, be relieved of anxiety as to the overall condition of the patient so that he may devote his undivided attention to the technical aspects of the procedure at hand. This represents one of the functions of the medical anesthetist. He can and should keep the surgeon informed of any and all de-

velopments bearing on the condition of the patient, for it is only by the establishment of an atmosphere of cooperation that the two teams can best serve the welfare of the patient.

Research

The second main area in which an academic anesthesia department must be active is that concerned with research. Such a department bears a strong obligation to produce original material characterized by its physiological, pharmacological, or general medical significance. Papers based on clinical impressions or advocating a bizarre clinical approach that is essentially nothing more than an anesthetic *tour de force* should be recognized for what they are. This is not to deny the value of well-written clinical papers. They have been and will continue to be both necessary and desirable, but they must be founded on statistical significance and they must contribute something positive to medical science.

The anesthetist finds himself, during his clinical work, in the rather unique position of being both a practical pharmacologist and an applied physiologist, and the academic anesthetist must not let this unparalleled opportunity slip by. He can and should serve as a valuable bridge between the pharmacology and physiology laboratories and the problems of clinical practice. In few other branches of medicine does such an opportunity daily present itself. This means that the anesthesia department itself must be acquainted with laboratory methods and be actively engaged in some purely laboratory experiments, but such work must be correlated with clinical experience. The danger of the direct application of the results of *in vitro* or of animal experiments to human beings under

clinical conditions is becoming more and more apparent, and the modern academic anesthetist is in a unique position to correlate basic research with clinical practice.

Teaching

The third major sphere of responsibility of an academic department of anesthesia lies in teaching. This is as important as clinical coverage and research, and any senior staff person in an academic department of anesthesia not only must be interested in teaching, but also must be provided with the wherewithal, especially time, to teach and therefore to prepare appropriate material in advance.

Today teaching in anesthesia, despite its basic importance, is perhaps the most neglected sphere in this specialty. Academic departments of anesthesia today face many major problems, including, for example, the fact that in 1955 31 per cent of all residents in anesthesia were graduates of foreign medical schools. But many of these difficulties are basically due to lack of emphasis of the importance of teaching or to the rendering of mere lip service to this difficult subject. If there are problems facing these departments, as there most certainly are, they can be solved only when the director as well as other staff members spend as much time, effort and energy in teaching as in the clinical and the research phases of the department. Teaching, it goes without saying, is not an easy job or one that is served by being generically in favor of the idea and then getting someone else to do it. Teaching must be approached with a positive attitude coupled with a deep interest. It cannot be accomplished by diffusion alone.

How should anesthesia be taught? First of all, those teaching it should

be primarily teachers of medicine, and secondarily teachers of anesthesia. Their approach (and knowledge) must be broad enough so that the role of anesthesia in medicine as a whole can be appreciated by the student. At the same time it must be specific enough so that the simplest principles of anesthesia, especially those in relation to respiration, can be applied to other branches of medicine. But perhaps most important of all is that the teacher of anesthesia educate the student, rather than instruct him. He must be aware of the sharp differentiation between training and education. Training a person so that he becomes facile and develops a high degree of clinical adroitness may be, and probably is, necessary. But the technical aspects of anesthesia, important though they most certainly are, are in themselves neither particularly appealing or complex, and it is indeed an intellectually sterile teaching program whose goal is the attainment of mere technical proficiency alone. There is more to medical education than instruction in how to do a urinalysis or a white count, and there is more to teaching anesthesia than the production of unconsciousness. The "nonpractical" but basic aspects of teaching that are included in the general term "education," are hard to define and to delineate in a precise fashion. They include the inculcation of a spirit of inquisitiveness in the student to the point where it is impossible for him ever to fall into a state of intellectual complacency. The educator must indicate to the student the limitations presently imposed on medical science (and most especially on anesthesia), and the student should be stimulated, if not actively to do something about them, at least to bear them in mind. This will, of course, involve the establishment of an atti-

tude of intellectual honesty in the student, a quality without which medical progress ceases and original cerebration becomes replaced by Pavlovian conditioned reflexes. A teacher of medicine has the dual responsibilities of technical training and of education. Merely because the former is primarily what the student wants, because it is easily accomplished by rote alone, and because the results of training can be easily assessed by examination, does not free the conscientious teacher from an even greater obligation, that of education. Those who teach medical specialties such as anesthesia should beware of the ease and danger of becoming mere trainers alone.

How to accomplish?

How can this type of teaching be accomplished? The limitations of time alone obviously prevent the complete fulfillment of such an admittedly ambitious program of education in every case. Even with those students known as residents who may be educated as well as trained for a period of years, time may prove inadequate for the attainment of complete education. Certainly a brief period of contact with a medical student for a week or so during his brisk rotation through one of many specialties is grossly inadequate from the point of view of time. But the mere fact that perfection cannot be attained with every pupil should not imply that the attitude of the teacher so deteriorates that he is no longer an educator but merely a trainer. Unless the teacher maintains a wide and deep interest not only in his specialty but in all of medicine, unless he imparts a sense of inquiry and intellectual honesty, and unless he teaches in a dynamic and positive fashion, then the student, even though being in contact with

this particular teacher for only a few brief days, will sense the disinterest, the medical provincialism, the preoccupation, and he will form his own philosophies accordingly. The teacher will have failed.

An academic department of anesthesia must be concerned with the medical education of several different groups. Obviously residents who have selected anesthesia as a field of future practice represent one of the major educational obligations of such a department. A great deal has been written and spoken on the subject of what residents should be taught and how they should be trained, and a review of the techniques used would prove redundant. For the present purposes it is sufficient to emphasize that an academic department should have residents primarily because of its interest in teaching, never with the ulterior motive of merely using them to cover the schedule. As a corollary of this, such a department must use considerable discretion in the selection of residents, and should never accept any or all applicants because of the exigencies of the clinical coverage.

The academic department of anesthesia must, if it is to fulfill all its educational responsibilities, recognize that its educational obligations are not centered solely upon the residents, and it must devote almost as much, if not actually as much, time, energy and effort to the teaching of medical students as it does to the teaching of residents. An academic department of anesthesia can no longer afford the luxury of teaching residents alone with more emphasis being placed, for example, on research than on medical student education. This sphere of the educational program may be tedious, but it is today of basic importance and one in which education *per se* should assume un-

equalled precedence over training.

Teaching of anesthesia to medical students should start in their pre-clinical years, during their course in pharmacology. At this time, anesthesia should be taught from a purely pharmacological and physiological point of view, with little if any reference being made to clinical problems of which the student has no concept at this stage of his development. This should be followed in the third year by a series of didactic lectures, preferably early in the academic year, to acquaint the students at the start of their clinical experience with some of the problems and dangers of clinical anesthesia. These lectures should be supplemented when possible with others on obstetrical anesthesia as a part of their course in obstetrics, as well as with lectures on oxygen therapy and the care of the unconscious patient, as a part of the course in internal medicine. Finally, in addition to the pharmacology course and the lectures in third year, the anesthesia department should rotate each student through anesthesia for a period of at least one week, perhaps more. Ideally this should be done in their fourth year when the students have obtained enough clinical background so that their experiences in clinical anesthesia can be correlated with general medical, surgical, and pediatric principles. The clinical instruction of medical students should be done by all members of the staff, from the head of the department to senior residents. It should not be delegated to residents alone. The object of instruction in anesthesia in the operating room is not to make anesthetists out of the students, but rather to acquaint them with the various problems and hazards of anesthesia, to instruct them in such simple things as the maintenance of adequate respiration, and again, to reemphasize the

applicability of the pharmacology and physiology of anesthesia to other conditions in other fields of medicine.

The third field where an academic department of anesthesia has teaching obligations is one that can be termed the "postgraduate" area. Such a department should and must call to the attention of those no longer in training but rather in the practice of medicine those advances and changes in anesthesia and related fields that may be of value to their patients. This includes, most obviously, general practitioners and surgeons, but it also includes pediatricians and obstetricians, especially in regard to resuscitation of the newborn infant; medical men, in relation to oxygen therapy and newer analgesics and hypnotics; and even psychiatrists, in their management of suicidal cases and electroconvulsive therapy. This portion of the educational program of the department is a long-term and not infrequently frustrating one. The cynical philosophy contained in the statement, "doctors don't reason; they just re-arrange their prejudices," is not only unnaturally pessimistic and wholly inaccurate, but states an attitude the luxury of which no academic department of anesthesia can afford. Such a philosophy merely serves

either as an advance apology for failure or as an excuse to neglect this important area. Postgraduate teaching naturally uses techniques that differ from education in other spheres, including the staff anesthetists' attendance at as many seminars, staff meetings and clinics as possible, but this educational program is just as important a responsibility of an academic department as the teaching of medical students and residents.

Summary

In summary, an academic department of anesthesia has duties and responsibilities that far exceed the mere clinical. These obligations have not, in the past, received the attention and emphasis they deserve, especially as regards education, but they are there and must be recognized and fully met. Failure to do so will result in the relegation of anesthesia to the status of a dull, unimaginative and empirical minor specialty. This will mean the loss of the tremendous contributions that this specialty is in the unique position of being able to provide. It is up to the academic departments to continue to assure that this does not happen and to further intensify their efforts to that end.

El papel del Departamento de Anestesia en un Hospital universitario

Aunque la anestesia ha estado en uso desde hace más de 100 años, el desarrollo de los Departamentos de Anestesia se ha verificado con lentitud y, de hecho, sus principios datan sólo de 15 años. Es necesario, por tanto, una definición del papel y propósitos de un tal Departamento. Sus funciones pueden ser divididas en 3 categorías principales: 1) clínica; 2) de investigación, y, 3) de enseñanza. Las tres deben ser consideradas de igual importancia. De estas tres funciones, que son discutidas detalladamente en este artículo, la

tercera, es decir, la enseñanza, es quizás hoy día la que, por lo general, más se ha descuidado. Los Departamentos universitarios de Anestesia se enfrentan con graves problemas, como lo muestra, por ejemplo, el hecho de que, en 1955, el 31% de todos los médicos residentes, especialistas en Anestesia, eran graduados de Escuelas de Medicina extranjeras. Pero la mayoría de esos problemas podrían ser resueltos, según el autor, si el director y los profesores del Departamento dedicasen a la enseñanza de la Anestesia tanto esfuerzo y energía como dedican a la de otras materias clínicas y de investigación. Y, ¿cómo debería ella enseñarse? Los instructores habrían de ser profesores de Medicina, en primer lugar;

y sus conocimientos y su modo de abordar la materia deberían ser lo bastante amplios para que los estudiantes pudieran apreciar el papel de la Anestesia en la Medicina como totalidad; sin embargo, la enseñanza habría de ser lo bastante específica para que sus principios más simples, especialmente los relacionados con la respiración, pudiesen ser aplicados a otras ramas de la Medicina. Pero lo más importante para el instructor es advertir que los aspectos técnicos de la Anestesia no son ni muy atractivos ni muy complejos, y que sería estéril el esfuerzo de querer desarrollar en los estudiantes una mera proficiencia técnica en la materia. El énfasis de la enseñanza debe estar en los aspectos *educativos*, lo que incluye, y muy especialmente, el inculcar en los estudiantes un espíritu inquisitivo que les impida caer en un estado de complacencia. El instructor debe indicar las limitaciones de la Ciencia médica en general, y de la Anestesia

en particular, estimulándoles a meditar sobre ellas con el fin de tratar de encontrar soluciones. En el presente artículo se sugieren varios métodos con los cuales se podría llevar a cabo una enseñanza que cumpliera tales propósitos. Se llega a la conclusión que un Departamento de Anestesia tiene deberes y responsabilidades más allá de los meramente clínicos, los cuales hasta ahora no han recibido, por lo general, la atención que merecen, y se advierte que un descuido continuo podría resultar en la relegación de la Anestesia al *status* de una especialidad menor, empírica y poco imaginativa. Esto, se agrega, significaría la pérdida de importantes contribuciones a la Ciencia médica.

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Separatas de este artículo, en español, podrán obtenerse si son solicitadas por un mínimo de 25 lectores.

Coronary Disease Booklet Available

The American Heart Association has revised its booklet "Heart Disease Caused by Coronary Atherosclerosis" under the authorship of Paul D. White, M.D. of Boston. The booklet is particularly designed to aid the coronary heart disease patient in gaining an understanding of the physiologic and pathologic phenomena underlying his condition. Included is a section on "What the Doctor Tells his Patient." Copies may be obtained either from local heart associations or from the American Heart Association, 44 East 23rd St., New York 10.

Premedical School Education in the Social and Behavioral Sciences

MARTIN L. PILOT AND THEODORE LIDZ

MEDICAL EDUCATORS have shown a great interest during the past decade in adapting the medical school curriculum to prepare physicians to gain a more comprehensive approach to the patient and his personal problems, to increase the student's awareness of the social and emotional forces affecting health and illness. It has repeatedly been emphasized that all physicians, regardless of specialty, learn to understand the patient and his interpersonal relationship, to treat persons rather than illnesses. These views have been amply expressed in many books and articles, such as "Medical Education and the Changing Order,"¹ "Psychosocial Medicine,"² "The Meaning of Social Medicine,"³ and "Psychiatry and Medical Education."⁴ It has also been recognized that as greater proportions of medical students eventually enter psychiatry as a specialty, that medical school education must take cognizance of such trends in their curricular planning. Many schools have altered their curricular and family care programs. Medical school education rests upon the college preparation of the student. Eventually, the needs and demands of medical educators influence the premedical curriculum.

Teachers involved in introductory courses in personality development,

family care programs, introductory psychiatry, etc., have formerly been handicapped by a relative naïvete of students concerning social and behavioral sciences as their premedical education had been predominantly in the physical and biological sciences. During the past few years at Yale, new difficulty has arisen in teaching the first-year course in personality development and psychodynamics because the premedical preparation of students varied so widely. Some students had not had any exposure whatsoever to the social and behavioral sciences, whereas, at the other end of the spectrum, some students had majored in the social or behavioral sciences, and some had even completed considerable graduate work in these fields. The first-year class, 1954, for example, averaged 3.3 courses in such subjects, six students had no courses and one student had approximately 17 courses in psychology and the social sciences. Measures had to be taken to plan the first-year course to cover the needs of students and to interest students from widely varying backgrounds. Discussion with colleagues in other medical schools revealed a common concern over adjusting the teaching to fit in with student's backgrounds and preparation.

There are two aspects to this problem which may be posed as questions. One is what is the average background of the student both academic and otherwise. The other is what is the variation in background with

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respect to sophistication and interest in social and psychological matters. Both questions are pertinent to the development of teaching programs in medical schools.

Since we had found changes in the backgrounds of students entering Yale Medical School, over the past 15 years, there was an interest in learning whether the shift of preparation of students represented a national trend, a regional trend, or simply reflected the interest of the admissions committee at Yale, or perhaps, a tendency of students interested in the social and behavioral sciences to choose the Yale plan of education.

Sample of premedical education

We therefore undertook to sample premedical education of students in seven medical schools in various parts of the country and which served

various types of community needs. The class entering medical school in 1954 was compared with the class entering in 1939 or 1940. Deriving data concerning Yale students, classes of 1939 and 1940 were unified, because in those years the entering class consisted of only 40 students.

The schools, aside from Yale, are not named. They are: (B) an "Ivy League" medical school, (C) a Midwestern state medical school in a large metropolitan area, (D) a Midwestern state medical school, (E) a Southern medical school of a high caliber, (F) a Southwestern state medical school in a rural state, (G) a Southwestern medical school.

The admissions records were scanned for college courses in sociology, psychology and anthropology. A course, given for three hours a week, for one semester, was counted as worth one credit.

The findings are presented in a percentage table which shows the

PERCENTAGE TABLE								
No. courses	Yale		B		C			
	1940	1954	1940	1954	1940	1954		
0	22	7	29	13	9	5		
1	26	14	26	12	30	17		
2	31	26	24	28	20	17		
3	11	22	8	17	18	27		
4 (or more).....	10	31	13	30	23	34		
	100	100	100	100	100	100		
No. courses	D		E		F		G	
	1940	1954	1940	1954	1940	1954	1940	1954
0	7	12	0	7.5	11	11	19	28
1	17	15	18.5	7.5	30	21	42	31
2	28	24	48	53	26	14	21	27
3	16	22	15	13	12	14	13	5
4 (or more).....	32	27	18.5	19	21	40	5	9
	100	100	100	100	100	100	102	199
TOTALS								
No. courses	1940	1954	B. "Ivy League" medical school					
0	14	13	C. Midwest state school-city					
1	26	18	D. Midwest state school					
2	26	24	E. Southern school					
3	16	18	F. Southwest state school-rural					
4 (or more)	18	27	G. Southwest school					

proportion of students at each school, whose preparation consisted of 0, 1, 2, 3, or 4 or more courses in the social and behavioral sciences. Comparison of the years 1940 and 1954 is made for each school. Bar graphs are also presented, which demonstrate the same data graphically.

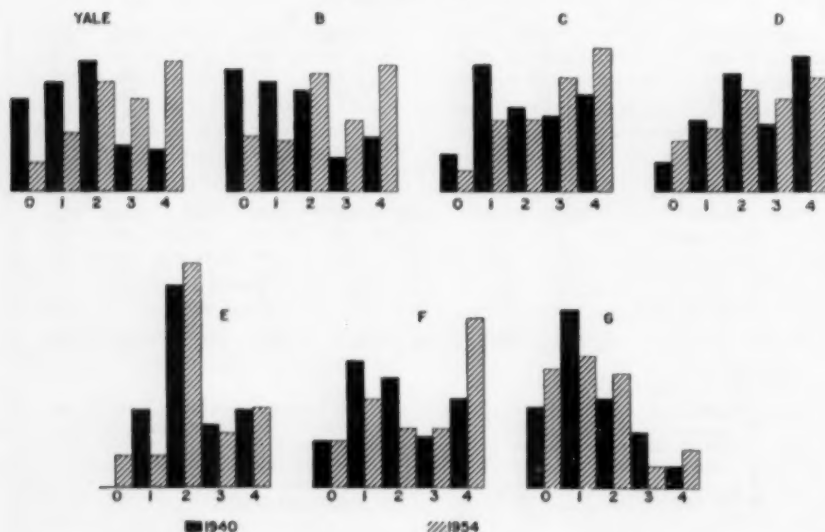
The Yale data showed that the 1939-1940 average was 1.7 courses as compared with 3.3 courses in 1954. The number of students with 0 courses dropped from 23 per cent to 7 per cent. Similar data is encountered in schools B and C. This shift in the direction of including courses in these areas, is statistically significant by the method of Chi square at the 1 per cent confidence level, at these three schools, the main shift taking place by means of the reduction of the number of students taking 0 and 1 course and an increase in the number of students taking 3 courses and 4 or more courses. This trend is also apparent in school F (the

Southwestern rural state school), statistically significant at the 5 per cent level of confidence. In addition, we have incomplete data from another Eastern "Ivy League" medical school, indicating that a strong shift has also occurred in this school. However, the remaining three schools, do not show any significant change, although one has an increased number of students with four or more courses. (School G.)

Lack of uniformity

The lack of uniformity in the data is of interest. The shift in the rural Southwestern school, precludes the simple explanation that the trend is more prominent in the East and in large metropolitan areas. However, it is to be noted that almost all of the students at this school received their college preparation within the state and it was discovered that courses in sociology and anthropology, now

PERCENTAGE TABLE



available, were not available to the 1940 class.

The lack of significant "shift" at school D puzzled us for a time because this is a school with a strong department of psychiatry, close connection with a college preparatory faculty, and an interest in this type of problem. Examination of the data in detail revealed that in 1940 the average number of courses taken had already reached 3.0, the highest for all schools that year, and that the distribution was and is, similar to the 1954 figures for schools Yale, B and C. We have no easy explanation for the figures at schools E and G, although it is possible that the recent expansion in the number of students at school G is connected with the increase in the proportion of students with no courses in the surveyed subjects.

These shifts cannot be explained entirely on the basis of changing requirements of medical schools, nor on the advice of premedical counselors. It must reflect, to some extent, a shifting interest in the students themselves, for a sizable proportion of students are now selecting four or more courses in the social and behavioral sciences. This group has doubled in most of the schools studied. These students are showing a concentration of study far beyond meeting the interest of any medical school.

The data presented demonstrates the variation in the backgrounds of freshman medical students with respect to the number of courses taken in the social and behavioral sciences. It also demonstrates evidence of a shift in the direction of inclusion of these courses in greater proportions in the student's background, but it by no means does away with the variation or spread. As a matter of fact, we have data that shows an increase in the variation. If the trend in prepara-

tion is beginning to run in this direction, medical educators face increasingly complicated responsibilities. The first type of responsibility is that of preparing material to teach these students, which will unify their backgrounds in some way, such as is done by the basic science courses in biochemistry and physiology, and to do this in such a way that we do not lose the interest of the "advanced" students. The other responsibility is of providing "advanced" students with special things to do, along with the problem of excusing them from courses with advanced standing, something we have found difficult to do because of the lack of uniform orientation of entering students. Even though a student may have taken several courses in psychology, this does not insure a grasp of personality development as we teach it. Colleges vary widely in what they offer for instruction in these areas. There is a need to provide sufficient elective courses or other activities to satisfy the needs of the increasing number of students who appear to be interested in psychiatry or related areas, and to do this, without neglecting the interest of the entire class in developing more insight into "human" or "social" aspects of medicine.

Summary

Data is presented from the admissions records of seven medical colleges, showing an increase in the number of courses taken in the social and behavioral sciences in four schools and trends in the same direction in one other, comparing the classes entering in 1940 and 1954. The significance of the change is discussed with respect to the problems of teaching psychiatry.

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La preparación en las Ciencias sociales que poseen los estudiantes de Medicina

Durante la década pasada los educadores mostraron gran interés en adaptar el *curriculum* de las Escuelas de Medicina a la necesidad de impartir una instrucción *compleensiva*. Se ha insistido en que todos los médicos, cualquiera que sea su especialidad, aprendan a entender al paciente, a apreciar sus relaciones inter-personales, y en suma, a tratar las personas más bien que las enfermedades. Esas demandas de los educadores médicos han llegado a influir en el *curriculum* del *College*, es decir, en la preparación universitaria que reciben los estudiantes antes de entrar a la Escuela de Medicina propiamente dicha. En el presente artículo se discuten las dificultades que surgen en algunas Escuelas de Medicina al querer enseñar cursos de introducción a la Psiquiatría, Desarrollo de la personalidad. Programas de atención médica familiar, etc., que deben, como fué el caso en la Universidad de Yale durante los últimos años, adaptarse a los niveles diferentes de preparación de los estudiantes. Para resolver tales dificultades sería necesario establecer cuál es el nivel medio de preparación en las Ciencias sociales, así como de interés, por parte de los estudiantes, en los problemas sociales y psicológicos; y también sería interesante saber si las variaciones encontradas constituyen una tendencia nacional, regional o simplemente personal. Con ese objeto, en Yale

se llevó a cabo un estudio de la educación pre-médica de los estudiantes en siete Escuelas de Medicina situadas en diversas partes de los Estados Unidos, haciéndose una comparación entre los estudiantes que entraban a los Colegios de Medicina en 1954 con los que habían entrado en 1939/40. Los resultados de ese estudio son presentados en un cuadro comparativo que muestra el porcentaje de preparación de los estudiantes de cada Escuela, así como los cambios habidos entre los años de 1940 y 1954, tomando como base el número de cursos en Ciencias sociales y Psicología que los estudiantes habían tenido. Se puede concluir que el promedio de preparación ha subido considerablemente, en general, y que hay también una reducción importante del número de estudiantes que no tuvieron ningún curso preparatorio en dichas ciencias. Pero es evidente la falta de uniformidad en cuanto a las diferentes Escuelas, ya que la tendencia al aumento es más fuerte en el Este de los Estados Unidos y en las áreas metropolitanas. El autor concluye que la tendencia general mostrada por los datos estadísticos no puede ser explicada enteramente por el aumento de requisitos establecidos por las Escuelas de Medicina, sino que debe reflejar un fuerte incremento de interés, por parte de los estudiantes, en cuanto a las Ciencias sociales.

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Separatas de este artículo, en español, podrán obtenerse si son solicitadas por un mínimo de 25 lectores.

The Student Textbook

DAVID C. SINCLAIR

NOW THAT SO MUCH attention is being paid to teaching methods, we are perhaps in danger of forgetting that the mainstay of medical education continues to be the printed word. After the daily battle with lectures and demonstrations, seminars and conferences, quizzes and integrated practical classes, the earnest student who wishes to pursue his studies further must still sit down to his textbook and read. We have not yet reached the stage of fireside instruction in the medical curriculum by means of television.

The material the textbook contains is intended to form the solid basis which is built upon by the instructors during the day. As Marshall (1951) says: "The effects of lectures and textbooks on students are quite different. From the textbook, 9 p.m. to 10 p.m., come conservative, well expressed substance and tradition. From the lecture, 9 a.m. to 10 a.m., they get, or should get, the inspiration of a flitting idea and the vision of how this part of the subject is related to a current topic or to their experience." A good textbook is of paramount importance to the student and instructor alike. With an indifferent text, much time has to be spent every day in a routine exposition of the subject, explaining points which the book has not clarified, and expanding topics which have been inadequately dealt with. A good book, on the other hand,

liberates a good lecturer, who can embroider the material in such a way as to stimulate and interest his flock.

The choice of a suitable textbook is therefore a vital matter, and nobody can deny that there is plenty of scope for selection. When I studied medicine it was pointed out to me that the mere existence of a plethora of remedies for a given disease was in itself sufficient proof that none of them was much good. It would perhaps be unkind to apply similar reasoning to the mountain of books which confronts the student in every medical subject, but it is a fact that many of them remain obstinately regional in their appeal. Every teacher of course knows that there is no really good textbook in his own subject except for the one he would write himself if only he had the time, and a surprising number of teachers do succeed in finding the time. The finished product has to stand the scrutiny of other teachers who also know that they alone could write a really adequate book, and this is but one of many factors, such as language difficulties, local or national pride, unfamiliarity, and so on, which may contribute to the failure of the book to spread over more than a restricted territory.

Yet sometimes a book takes wings across even the oceans and becomes a standard text unanimously accepted as suitable by the most diverse medical schools. Some of its success indeed may be due to a combination of luck and good publishing manage-

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ment, but if so many find it useful one cannot escape the conclusion that it must fulfill its purpose better than most of its fellows. What is it that makes these books so popular? If we could but answer this question satisfactorily we should all write best-sellers, for there is nothing intrinsically difficult about writing a textbook; the only trick lies in writing a good one. Yet it is possible to suggest at least some of the basic reasons which lie behind a book's general acceptance if we consider the point of view of the medical student in some detail.

The student's needs

There is first the matter of the recommended list. When a student begins to study a subject he is in no position to make reasoned discriminations between the textbooks which deal with it. Accordingly, every department recommends a given list of books for the guidance of beginners, and this list is usually made out by the head of the department on the basis of his own personal preference. In many instances the lectures, practical classes and examinations are geared to the recommended list. In such circumstances the recommended books are assured of a steady circulation to a captive market, for deviationists who choose to employ other books are looking for trouble, and their numbers are few. If, as so often happens, the recommended book has been written by the head of the department, then those students who do not trouble to read it are clearly unfit to become doctors. Even when the department permits a considerable latitude in the choice of textbooks most students behave conservatively.

Initially, therefore, the student tends to accept passively what is

thrust upon him, and it is only later, when he finds out that the recommended books do not seem to suit his particular needs, that he looks for some alternative. He has two main sources of advice: other students, who have recently passed through the same fires which he is now experiencing, and members of the teaching staff. He may be chary of approaching the latter, because this will expose his inability to get along with the recommended books, and he fears that this may brand him as a non-conformist. He visits the booksellers and browses among the available possibilities. He reads reviews. He spends hours in the library making notes. Finally he buys a book recommended to him by a chance acquaintance met in the street, a man working for a degree in mathematics.

Sometimes these quests get a little out of hand. I have known students who appeared to collect textbooks as an end in itself, and I have always warned those who consult me on the matter that it is dangerous to change horses in midstream too often. Many students lack the insight to realize that sometimes the fault lies not in their books, but in themselves. Yet medical students, despite their choice of vocation, are human beings, and exhibit all the endless variety of the species. Most students can read; it would be perilous to generalize further. It cannot be argued that one book ought to fit all kinds of students, and an individual who finds the recommended books useless is entitled to experiment with others. It is not always the unsatisfactory student who hankers after a book with a different point of view.

Basically, students expect only one thing from their textbook—that it should help them to understand the subject. Their motives are necessarily mixed, for they have two ob-

jectives—first, to get through the examination, and secondly, to become good, or at least successful, doctors. In a few students the first desire is lamentably uppermost, and as the examination approaches it is they who tend to buy the condensed “cram” books written in telegraphese and full of mnemonics. In others the second urge rather impractically takes command, and in search of the fullest information they are led to buy enormous multi-volumed books written by a whole convention of authors and quite impossible to digest in the limited time available. There is, however, a balance between opportunism and idealism, and this is attained by most students, who settle for a text of medium size, written in what passes among doctors and scientists for normal language, and affording a guide to the subject without undertaking to explore its furthermost recesses.

The qualifications which the student desires such a book to possess are several. He expects the author to cover the syllabus adequately and impartially, to ensure that gross mistakes and misprints do not occur, to provide a good and easily workable index, and to see that the illustrations are suited to their purpose. He does not want the book to assume too much knowledge on the part of the reader. Sometimes he likes a bibliography to indicate further reading, or a brief glossary of technical terms. Above all, he insists that the writer should present the matter to him simply and clearly, with the main facts and ideas given due prominence. If it is humanly possible, he likes his reading to be interesting and stimulating.

Nor does this exhaust his demands; he has a few words to say to the publisher as well. The book must be up to date. The type face must be large

enough to obviate eye-strain, the illustrations should occur close to the point in the text which they illustrate, and the paper and binding must be of adequate quality to stand hard usage. The book should not be unwieldy enough to preclude reading in bed, and the price should not be wholly unreasonable (British publishers of textbooks for nurses often complain bitterly that their clients are the only people in Britain who still think that a textbook costs five shillings, but the same is true of a surprising number of medical students).

The author's task

Some of these matters require more detailed consideration, and one does not have to act as a reviewer for very long to realize that this is what they do not always receive from either authors or publishers, though the established medical publishers are now so adept that there is little room for criticism. It is the author who most often falls short of excellence. The task of writing a textbook may appear deceptively simple. After all, this is the author's own subject, he has spent many years lecturing on it and enlarging its scope by original research; what could be easier than to press into a book the fair flowers of his philosophy? It is only when he starts to do so that he finds out the difficulty of reconciling completeness with brevity, detail with comprehensibility, factual information with intellectual stimulation. He may have spent his life writing scientific papers for the edification of his colleagues, only to find that the style painfully acquired for this purpose (Baker, 1955) stands him in ill stead when he wishes to communicate with medical students. He may learn the hard way that it is

not sufficient merely to rearrange the material in his lecture notes and slap in a few illustrations (Marshall). He may fail to dismiss from his bonnet the favourite bee which has buzzed there happily for so many years, and may produce a book on internal medicine in which every second illustration is an electron-microscope photograph of a collagen fibre. He may be unable to view his own field of enquiry as only a tiny patch of turned earth among the broad sweep of the countryside, and so the respiratory system may receive three times as much attention as any other. Worse still, he may fail to preserve a clear idea of the audience to whom the book is addressed.

Behind the primary audience of medical students stands an army of other people who might possibly be induced to read the book—the teachers, the researchers, the clinicians, the ancillary workers—and the siren song they sing has lured many a book to its doom. Under modern conditions the cost of publication makes it very tempting to aim a textbook at two or more dissimilar groups of people, with the almost inevitable result that it satisfies none completely (there are, of course, notable exceptions). To present elementary physiology to occupational therapists, nurses, and medical students three books are needed, not one. The previous backgrounds of these audiences and the needs of their professions vary so much that different approaches are necessary, and nothing could be more fundamental than the desirability of teaching, whether by textbook or by other means, being conducted on a level adjusted to the student.

Every author has to remember that textbooks are read by credulous, ignorant, ill-educated people—people, in fact, very like himself. This at once imposes on him a duty, for he

must not use the printed page to indulge in his wilder flights of fancy unless he distinguishes clearly between what is commonly accepted and what he himself would like to believe. Readers—again like writers—are also often of an unbelievable stupidity, and many authors who have lived with a subject for years cannot conceive that an explanation which to them is conducted in words of one syllable has to be spelled out in individual letters before a proportion of their audience will understand it.

The matter of style is rather more difficult. All that is demanded is that the style should be unobtrusive, that it should not interpose itself between the reader and the matter. No student wishes to waste time disentangling stylistic obscurities. I know of several student textbooks which are full of excellent material but which I personally am unable to read, though I have made valiant efforts. This does not mean that colloquialism need break in, nor need there be a descent to the style of mass-appeal journalism. It does mean that an effort should be made by the writer to see that the simple word, the simple construction, the short sentence, should always be used when possible. Perhaps the most common fault of medical authors is an uncontrolled verbosity, which they manifest even when they are medical students. It has been estimated (Gill, 1940) that anything between 10 and 30 per cent of the words submitted in a manuscript are needless, and that 15 per cent of the words now in print are "idle." The advice of Dr. Johnson's tutor to "read over your composition, and wherever you meet with a passage which you think is particularly fine, strike it out" has a particular application to the writers of many textbooks.

Some writers have a talent for

vivid metaphor and analogy which can immediately illuminate a difficult point, and examples of this occur in nearly all textbooks of physiology (Hoff, 1955). It is, however, a dangerous practice if carried too far, for the student tends to grasp at the analogy and finds that the point itself eludes him. Still more dangerous is an aptitude for the framing of aphorisms. This practice reaches its apotheosis in textbooks of surgery, but is to be found in nearly all clinical works. Aphorisms are often extremely helpful, but a mistakenly rigid belief in a dogmatic statement may grossly mislead the student.

Including details

In the matter of including details it is difficult to strike a balance between those which are essential to the argument and those which can be dispensed with or which are actively confusing. Students do not usually want exact descriptions of apparatus and individual experiments, nor is it desirable from the reader's point of view to include too much in a single illustration. The chief offenders in this respect are the anatomy books, whose illustrations are often covered with such a forest of leaders that a lens may be needed to discover the picture underneath. Closely allied to this essentially preclinical fault is the clinical passion for completeness. Many clinical books intended for students devote much precious space to the description of rarities which the average doctor will never encounter in a lifetime. Characteristically the student absorbs eagerly all the available information about them, and, when the examination comes, finds himself totally unprepared to cope with such mundane problems as are presented by a patient with bronchitis or inguinal hernia.

To the hard-pressed student a good index is invaluable. Peculiarly irritating are those of the type which says "Ulcer, duodenal, *see under duodenum*." On looking under "duodenum" one finds "Ulcer, *see duodenal ulcer*." And so on. If these headings are to be put in at all, it would surely be just as simple to give the relevant page numbers each time, instead of forcing a little guessing game on the reader. Usually he is not in the mood. If references to the literature are included they should be clear (students are not expert bibliographers), and most students like them to include the title of the paper. Since this often has some relation to its subject matter, students are occasionally able to decide whether they want to read it or not. Again, now that so few students receive much instruction in the classics it is often difficult for them to commit to memory the terminology in which the business of the preclinical sciences is conducted. Remembering a term without being aware of its meaning is an accomplishment which medical students share with talented parrots, but many students find their task made easier if a glossary indicating the meaning and derivation of some of the more important words is included in their textbook.

Marshall rightly condemns the textbook which provides questions at the end of each chapter when these questions are intended to be answered in the author's own way from the material of the chapter. As he says, this merely encourages the student to "recite after me." Nevertheless, provided the questions are broad ones and have no specific answer they may well have a stimulating effect on some types of student, and they can at least serve to indicate the immensity of the unknown.

The question of illustrations is a

most difficult one (Macmillan, 1953), and the tendency is usually to over-illustrate. It is often the publisher who has to restrain the author from putting too many in, just as the audio-visual aids department has to restrain lecturers from showing too many slides. Many books make lavish use of colour where half-tone blocks would be perfectly suitable, and half-tone blocks are often used where line drawings would meet the case. There is little question that the diagram is the most generally useful form of illustration for student purposes, and many books make far too little use of them.

The format of textbooks is subject to immense variation; there are long ones, thin ones, pocket ones, and enormous ones which compete in size with lectern bibles. Perhaps each has its advantages, but the smaller the book the greater the variety of circumstances under which it can be read. Few people take Cunningham's "Anatomy" along on a bus ride.

About print and paper there is little to say, for nowadays these are both usually excellent. Nevertheless there is a tendency to print textbooks in double columns which many people find distressing. When each line contains only seven or eight words their eyes are required to work considerably harder, and they find such books more tiring to read than those with a more normal layout. This may be a matter of practice, but the fact remains that many students do not like having to put in the extra effort.

Revisions and reviews

The desire of the student for up to date information necessitates a periodical revision of the contents of all medical textbooks, and no student is ever recommended to buy any but the latest edition of his selected text.

Even automobiles and television sets do not suffer such a capital depreciation when a new model comes out as does the outmoded edition of a student textbook. In some subjects this is reasonable. In biochemistry, for example, events move so fast that the lengthy interval necessary to prepare a new edition renders it out of date almost as soon as it appears. In others, however, such as anatomy, there is little change from year to year in the material taught to the student, and it is nonsensical that the old edition should at once become worthless, fit only for pulping. It is true that anatomy has a device for encouraging new editions which is denied to most other subjects: the terminology is always changing. In Britain we have talked four anatomical languages this century, and all are still in use by the people who were taught them. If we are to establish a unified language by a reasonable date in the future it is therefore desirable that everybody should read only the texts containing the latest revision. So runs the argument, and so sell the new editions.

There remains the matter of book reviews. The fact that nearly every medical journal devotes space to reviews of medical books indicates that some people find them helpful in deciding what to buy. Nevertheless it is claimed by some that there is no need for a critical review, since individual opinions differ so widely; a simple description of a book would suffice. This is of course true of reviews in other fields: the novel which is slammed by the critics in the Sunday papers becomes the success of the year, and the play which has universally glowing notices flops in 10 days. But with plays and films the opinions of different reviewers can be correlated with one's own reactions, and in this way one can come to fol-

low with confidence a particular reviewer. Similarly it is possible to attach a proper weight to a review of a textbook if the name of the reviewer is known. This is little help to the student, but can assist the teacher in compiling his recommended list, for he is familiar with the personalities in his field. Such a system also permits the author to know whose opinions are being advanced for or against his book. But not all journals publish the reviewer's name; some publish initials only, and others give no information, the editor taking the responsibility for the opinions expressed. In these instances the weight to be attached to the review is in proportion to the weight to be attached to the reputation of the journal.

There are arguments for and against both systems. If names are published, a reviewer junior to the author in his profession may hesitate to express himself too freely since it may damage his chances of advancement. Similarly a caustic review by a senior man of a junior's book may do considerable harm, and seniors are therefore sometimes chary of frank speaking. On the other hand the anonymous reader, if he gives an honest opinion, may be suspected by the author of personal animosity or jealousy. It is clear that the position of a book reviewer is a dangerous one, and under either system he must tread warily.

Proper use

These, then, are some of the matters which the teacher ought to take into consideration when he takes the drastic step of issuing a list of recommended books. It is always difficult for the teacher to put himself in the place of the student, to forget his painfully acquired knowledge and

approach each new textbook with the open and ingenuous mind of one who is beginning the subject for the first time. Yet it is necessary to make the effort, for a proper choice of book may have a far-reaching effect on the running of the department, the attitude of the student towards the subject, and perhaps on his whole future career.

But the teacher's responsibilities do not end when he has pressed into the hands of the student the very best textbook he can find. He has still to be sure that the recipient knows how to use it properly. This is perhaps more true in the early stages of the curriculum than it is later on, for most people acquire a facility in the handling of textbooks with increasing practice. It is nevertheless true that only a minority of students entering medical school have much idea of how to work from a book. They will complain that they cannot make sense of a particular passage, and on inquiry it will be found that the effort to understand it was made while the radio was on and a game of bridge in progress in another corner of the room. Again, few students make much attempt to relate what they find in their textbook to what goes on in their classes. When the lectures and practical classes treat of respiration they are to be found at night solidly plugging away through the endocrine glands; when they are working in the department of child health they pore over their textbook of gerontology. Students have to be told that if they see an interesting case in the clinic one morning they should look up the condition in their book that night.

Students have also to be brought to realize that the textbook is not infallible, and that it is only as good as the man who wrote it. Many students regard the printed word with

such veneration that they accept everything in their textbook as gospel, and it is a salutary corrective to such an attitude to encourage them to look for mistakes. A friend of mine once bet me he could find a mistake—or at least a thorough-going divergence from accepted opinion—on every page of a well-known textbook of pathology. After 20 pages I paid up. It is also instructive for the student to compare the so-called "facts" given in different books. If, for example he consults several anatomy books to find out the extent of the "bare area" of the pericardium he will find that in one book the border of the pleura comes right forward to the midline, and in another it stops $3\frac{1}{2}$ " away.

It is also necessary to warn the student not to overdo his nightly reading. There are too many who prolong their studies far into the night, thinking that in this way they will attain the quicker a mastery of the subject. On the contrary, every successive hour spent in this way brings steadily diminishing returns, and it is probably a safe working rule that all work done in this way after midnight is useless, unless in exceptional individuals. When I was a student one of my clinical professors was most insistent that no textbook studying should be done after 10 o'clock at night, and any transgressors he accidentally caught were given the rough edge of his tongue. The same professor used to forbid the use of any books at all for at least three days before the examination, and I personally found this excellent advice, though difficult to follow with an easy mind.

If students will but take the trouble to learn how best to use their books properly at the beginning of their careers they will be spared a deal of trouble later on. Many of their texts

will become old friends, faithful servants rather than importunate masters, to be kept throughout their medical training and perhaps referred to long afterwards. Others, alas, will be hastily sold before there is time for a new edition to appear. These are the ones of whose authors Dr. Johnson must have been thinking when he wondered "that so many people have written, who might have let it alone." There are many reasons for writing a book. Sometimes the motive is evangelical—to disseminate a point of view, or to rescue the impressionable student from the dangerous opinions current in other books. The idea may have a financial basis, for the sales of the most learned medical monograph look ridiculous beside the sales of an established elementary textbook. Sometimes books are written from simple vanity, or from the desire for advancement. Whatever the motive, it is as well for the author to realize clearly what he is doing as he loads his typewriter. A student can get along with uninspired lectures and inefficient demonstrations; he can even survive an unintegrated course of instruction. He cannot get along without a satisfactory textbook.

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Los Libros de Texto

Hoy día, cuando tanto énfasis se pone en el mejoramiento de los métodos de enseñanza,

hay el peligro de olvidar la importancia de los libros de texto, que siguen siendo parte esencial de la educación médica. Un buen libro de texto ayuda tanto al estudiante como al profesor. El autor del presente artículo examina en detalle todos los ángulos de ese problema, tratando de establecer cuáles son los diversos valores que hacen un buen libro de texto; qué factores intervienen en la selección, por el estudiante, de un determinado libro con preferencia a otros varios; y cuáles son las diferencias entre un libro de texto *bueno* y un libro *pópular* (aunque ambas calificaciones coinciden muchas veces). También se discuten la actitud de los estudiantes hacia esos libros

(hay el peligro de que, a veces, lleguen a considerar a éstos infalibles), y los problemas de los profesores al tener que recomendar libros de textos a los estudiantes. La conclusión general del autor, después de examinar la cuestión en todos sus aspectos, es la siguiente: "Un estudiante puede tolerar conferencias aburridas y demostraciones ineficaces; incluso puede sobrevivir tras un curso de instrucción no integrada. Pero no puede pasarse sin un libro de texto satisfactorio."

* * *

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Socio-Medical Problems in a Postgraduate Teaching Program

A. QUERIDO

ONE OF THE MANY points that emerged from the First World Conference on Medical Education (London 1953), was the necessity to acquaint the medical student and the physician before his entering practice with the social problems in which the patients might be involved. The necessity of introducing that aspect into medical teaching hardly needs to be emphasized. Not only is the young doctor, lacking in understanding of the social structure in which his work has to be carried out, like a motorist without a map, but it has become more and more clear that social and relational factors are tightly intertwined with the somatic and clinical problems in such a way, that the latter cannot be dealt with adequately without a thorough consideration of the former in each individual patient.

It is perhaps not too optimistic to assume that the above statement is accepted by the large majority of medical teachers and in its present stage the problem posed is more one of method than of principle. In a number of medical schools various methods of acquainting the undergraduate and the postgraduate with the patient's problem outside the somatic facade which he turns towards the physician, are in a more or less advanced state of progress. In the United States we have the various ways in which the undergraduate is

charged with the health supervision of a person or a family for a longer or shorter period. In Great Britain we have the famous teaching practice in Edinburgh and various other teaching practices are contemplated or carried out, sometimes linked up with health centers, sometimes carried out by private practitioners in the frame of a medical school organization.

It goes without saying that this socio-medical teaching can only be successful if it is grafted on the medical organizations and general teaching schemes existing in a particular country. Therefore the way in which this teaching developed in the Netherlands and especially in Amsterdam can only be understood against the background of medical organization in this particular case.

Medical background

Some attention of a very gratifying nature has been paid in Great Britain and the United States to what is called for short The Amsterdam Experiment, but which more rightly must be described as the socio-psychiatric care of the mentally ill in the Netherlands. By this method an attempt is made to deal with a number of sufferers from mental disturbances in their own surroundings before, after or without hospital admittance. A psychiatric first aid service, which deals with patients coming under the attention of the family physi-

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cian or of the police, attempted suicides, drug-addicts, etc., is merged into this activity. In those cases the social conditions of the patients, their relations towards friends, family, employer, and towards the social institutions, are the chief means used to handle the case and to bring about the desired optimal adjustment.

This, you will understand, is casework. Casework however, carried out by a psychiatrist and a medico-social worker on an equal footing, each bringing into the case their own special skills and perspective, and integrating those into one single action program. Since we have to deal with patients, the final responsibility rests with the physician of the team. The role of each team member however is determined after mutual consultation and is carried out on the responsibility of the team member concerned.

Several descriptions of this system have been published, the earliest being in "Mental Hygiene"¹ and after the war there were various short publications². An extensive discussion of the way of work was published in the proceedings of the Milbank Foundation Conference of December 1955.

It is not the place here to elaborate on the methods of this social service to mental patients, nor on the philosophy behind it or on its results. Suffice it to say, that this service has for many years been a training ground for postgraduates specializing in psychiatry.

Training for psychiatrists

Training for psychiatrists in the

(1) "Community Mental Hygiene in the City of Amsterdam", *Mental Hygiene*, IXX, 177, 1935.

(2) Proceedings of the Royal Society of Medicine, September 1955, Vol. 48, No. 9, Page 741. *The International Journal of Social Psychiatry*, Vol. I, 2, 1955.

Netherlands takes place exclusively in university centers under the direct supervision of a professor of psychiatry. The training time is at present four years after having obtained the general license to practice medicine. The training consists of at least two years of clinical and out-patient work, to which may be added on the approval of the professor, psychotherapy and work in a mental hospital or in a child guidance clinic. All trainees in Amsterdam have been required to complete a period of not less than six months in the social psychiatric service. In this period they are charged with the responsibility of one section of the town, in which an average of 400 patients live at home, and which responsibility they share with two social workers. Furthermore they take part in the 24-hours rota duty of the service. Their work is supervised by the head of the service, who is in daily contact with them. They also remain in contact with the psychiatric clinic and are able to follow the clinical history of patients they had themselves admitted. They are charged with the preparation of the discharge of patients from the clinic and visit the various mental hospitals to which patients may be sent, in order to discuss possible problems and to prepare eventual discharge. Their main work consists in home visits to the patients in their sections, in order to study the interaction of the ill person with his surroundings and to try to establish the desired equilibrium in the given situation. In the course of his work the trainee makes the acquaintance of a large number of social institutions.

The result of this training stage has proved to be excellent for the later work of the specialist. He has learned to look at the patient not as an isolated entity in a hospital bed,

out as an interesting point in a force-field. The interaction between the disturbed person and those who surround him in a narrower and wider sense has not only become clear to him, but he has learned to handle it. He has learned to cooperate with various social organizations and to understand their influence in regard to the mentally ill. When the psychiatrist, having had this training, enters into practice, the advantage of this experience becomes quite evident.

Application to general medicine

Therefore, when in 1949 I left the position of head of this service and became, as Director of Public Health, charged with the responsibility for the planning and organization of public health activities in the City of Amsterdam, and a few years later: also with the teaching of social medicine at the University of Amsterdam, the question naturally posed itself if this system, which had been so successful in the teaching of psychiatry, could be carried out to encompass the wider field of general medicine. Considering our organization, it was not possible to give the future physician—and we are speaking now especially of the future general practitioner—analogous status as the trainee for psychiatry; there simply is no service in which he could be fitted in. It was also impossible to place the young doctor with a practising physician, since this would imply selection of physicians and supervision of their activities, which is in our conditions unfeasible to carry out. A teaching practice on the Edinburgh plan was contemplated, but here we expected on good grounds that the public would not be willing to play its part and visit this practice.

Finally another solution was attempted, which is now being tested

in its practical consequences. As said above, the training of specialists takes place in a number of centers, usually—but not always—university hospitals. The head of the department, a professor or a specialist of high standing, is responsible for the training of the people attached to his clinic. They have various grades of seniority, as in other countries; to compare however our grades with those current in the United States and Great Britain, would perhaps give some confusion. Suffice it to state that the youngest postgraduate, entering into the training for a specialty, is called "assistant." He is responsible for an average of 10 to 15 beds, according to the specialty. Above him is the head-assistant, responsible for a ward. Above the head-assistant is the senior staff, in charge of a number of wards or of special duties. The assistant begins immediately as a specialist-in-training, i.e. his work is directed towards the special interests which the chosen branch of medical activities offers, and he has to call in other specialists as consultants as soon as a problem arises outside his own field. The tremendous drawback of this system is that the patient in a teaching ward is automatically split up along specialistic lines and that the whole training of the specialist is confined within the boundaries of this division, which as a matter of course will reflect his way of work when he becomes a practicing specialist. On the other hand the general practitioner, having received no postgraduate training whatsoever after obtaining his license, becomes the well-known figure of the undifferentiated signpost between a number of specialists. This, of course, has been said many times, and it is not typical of Dutch conditions only.

Now it was contemplated whether

it might be possible to give the post-graduate, who wants to become a general practitioner, a training which might prepare him for the specific task he will have to carry out later on. This specific task might be defined as the interpretation and integration of the sick person in the face of specialized medicine, counteracting, so to say, the splitting up of the patient into a number of specialistic problems, and communicating to the specialist the social and relational problems by which the patient is burdened, in so far as the specialist must become acquainted with those problems in order to carry out his own task as well as possible.

The experiment

This idea is at present being carried out in an experimental stage in one of our smaller city hospitals. A young doctor, recently licensed, and wanting to become a general practitioner, has been attached as an assistant to the staff of this hospital: he must try to keep on seeing the patient as a whole. In order to do this he must extend the morbid history in such a way that an understandable picture of the life of the patient be obtained. He must integrate the findings of the social worker or the hospital with his own picture of the patient. He may visit the home of the patient in order to complete his picture. Then he has to consider the clinical findings as elicited in the meantime by his specialist colleague-assistants. When he believes that data found by him might be pertinent to the diagnosis or treatment, he has to confer with his colleagues. He considers the possibilities of recovery on discharge and the necessary measures for rehabilitation. He sets the necessary machine for social work in motion. He ensures that the recommen-

dations on discharge are carried out. In short he fulfills the role of the ideal general practitioner, which in many smaller hospitals, especially in rural situations, is actually carried out by the family doctor, but which is totally lacking in the larger cities, the larger hospitals and certainly in the teaching hospitals. The activities of this assistant are supervised by me. His attitude towards the patient, towards the specialist, towards specific problems and towards society is regularly scrutinized on the occasion of case discussion. An independent check up on his findings and the further fate of the discharged patient is carried out as an independent piece of research.

This experiment has now been running for about nine months. It is quite certain that the young post-graduate learned to understand a number of social and interhuman problems, which otherwise he could only have mastered after long and painful years of struggle. The experiment has a very hopeful look. We may expect that when a number of postgraduates have passed through this assistantship, which will take a year for each, the influence of the so trained general practitioners will gradually permeate hospital practice and may counteract the pernicious splitting up of medical practice as we witness now-a-days. It is seriously contemplated to make this assistantship of one year compulsory for all postgraduates before entering into actual practice. The supervision should probably be carried out by the various professors of social medicine, but other solutions might also be possible.

Training for specialists

It has been asked why this kind of training should not be given to all

postgraduates, to those who want to become general practitioners as well as those who propose to become specialists. The discussion on this point is not yet closed. My personal opinion is, that the specialist needs a different kind of introduction into this field than the general practitioner. The specialist is a special kind of man; he bears already the type of his specialism or is very soon stamped by it, otherwise he should not choose his specialty. He is not interested in broad human problems, but only—and here I think he is quite justified—in those pertaining to his field of activity. Cynics might conclude that I think the specialist past hope; this certainly is not true, but you cannot

expect a man to dig deeper and deeper into a special field of knowledge, to acquire highly technical skill and to devote his life to this purpose, and at the same time to entertain a broad interest in the general activities and problems of his patients. I think both states of mind are self-contradictory. He needs this interest only as far as it impinges on his specific activities.

I hope it is well understood that the scheme as explained above is at present young and experimental; furthermore it is adapted to Dutch conditions and to the status of the general practitioner in Holland. I shall be glad to report when more experience in this field has been gathered.

Problemas sociológicos como parte de la enseñanza de los postgraduados

Uno de los temas más interesantes discutidos durante la *First World Conference on Medical Education* (Londres, 1953) fué la necesidad de familiarizar al estudiante de Medicina con los problemas sociales que se hallan involucrados en el ejercicio de su profesión. Tal necesidad es reconocida hoy por la mayoría de los Colegios de Medicina, pero los métodos empleados para responder a ella varían según los diferentes países. El autor de este artículo, Profesor de Medicina Social de la Universidad de Amsterdam, trata del llamado "Experimento de Amsterdam", que se refiere exclusivamente al campo de la Medicina socio-psiquiátrica y constituye un intento de impartir tratamiento a los pacientes en su propio medio, después de la hospitalización, o cuando no ha habido previo internamiento. Algunas descripciones de dicho "Experimento" han sido publicadas ya (cf. "Community Mental Hygiene in the City of Amsterdam," en *Mental Hygiene*, XXX, 1935, p. 177; *Proceedings of the Royal Society of Medicine*, Sept. 1935, vol. 48, p. 741; y *The Intern. Journ. of Social Psychiatry*, vol. I, 1955, p. 2). Ese Servicio proporcionó un excelente campo de entrenamiento para los estudiantes de Psiquiatría de Amsterdam du-

rante el período de instrucción especializada, y las ventajas de las experiencias así adquiridas se manifestaron cuando ellos empezaron a ejercer su profesión. El autor de este artículo, al dejar en 1949 la dirección de dicho Servicio para ocupar la Cátedra de Medicina Social de la Universidad de Amsterdam, planteó la cuestión de si tal sistema de entrenamiento podría ser aplicado también a la Medicina general, y después de haberse discutido varios métodos se adoptó el siguiente: el estudiante graduado, a punto de dedicarse a la práctica de la Medicina general, es asignado como "asistente" a uno de los hospitales de la ciudad. Allí trata de obtener una visión total de la persona, vida y enfermedad de los pacientes a su cargo, en la que se integran los datos clínicos establecidos por él mismo y los datos proporcionados por los especialistas, así como por el *social worker*, del Hospital, y los que él mismo descubre durante sus visitas a domicilio del paciente. Asume, pues, frente al paciente, la actitud de un "médico de familia". Ese sistema, designado para contrapesar las deficiencias de la creciente especialización, se halla aun en la fase experimental.

* * *

Separatas de este artículo, en español, podrán obtenerse si son solicitadas por un minimum de 25 lectores.

Editorials and Comments

THE CLINICAL TEACHERS in our medical schools occupy a unique and somewhat difficult position in that they owe allegiance to two quite diverse groups, their university and their local medical profession.

Their university very frequently provides a public information office and staff who are charged with the responsibility of informing the public regarding the activities, problems and progress of the whole university staff. If the university is to receive the public understanding, sympathy and financial support it needs for growth and progress, it must of necessity make every effort to keep the public promptly and fully informed concerning all developments of importance or of possible public interest. From the point of view of the university public information officer, for example, a release announcing in the public press the obtaining of an impressive research grant by a faculty member would be a routine part of his required work. And since "names make news" in newspaper work, naturally the names of the principal investigator would likely make up a part of the announcement.

The local medical society is very likely to have a public relations committee whose duties include, among others, noting all references to local physicians in the public press and evaluating those references in terms of the code of ethics adopted by the local medical society and based on the American Medical Association's statement of ethical principles for all practicing physicians. In the eyes of this local committee of practicing physicians the announcement in appropriate medical or educational journals that a certain clinical teacher in the local medical school had received a sizable grant to carry on investigation of the causes of arteriosclerosis for instance, likely would be quite within the bounds of acceptable medical ethics. But to announce the grant and the name of the recipient in the public press might lead the local committee to the conclusion that such announcement constituted an open invitation for arteriosclerosis patients to seek treatment or consultation with this clinical teacher, and was therefore unethical even though the clinical teacher was limited to acceptance of patients only on the reference of other physicians.

It is certainly unreasonable to expect the university public information office to withhold important information from the public because of certain unique requirements of the medical profession. On the other hand all clinical teachers who are engaged even ever so slightly in the practice of medicine are fully aware of the sound reasons that underlie the code of ethics adopted by the organized medical profession and are anxious to maintain the confidence and respect of their peers in the profession by meticulously observing that code.

To bring these divergent points of view into harmony and to develop a satisfactory plan of disseminating public information with due defer-

ence to the unique ethical requirements of the medical profession is a task calling for careful study, mutual understanding and a spirit of cooperation between all parties concerned. It has been done with apparent success in a number of medical school settings. Might not a study of these plans offer real assistance to those schools and communities going through the throes of finding an answer to this vexing problem? D.F.S.

New Twist to an Old Controversy

IT is an old tradition in the United States for a new medical school to be greeted with pronounced lack of enthusiasm by the local medical profession. The reception is likely to be coolest when the organization of a teaching hospital in a small community upsets established patterns of medical practice. The establishment of the four-year medical school of the University of Mississippi at Jackson is the most recent example.

The delegates from Mississippi at the American Medical Association convention in Miami in December 1954, clearly indicated their disapproval of the policies of the new school and centered their attack on the method by which the university proposed to remunerate its full-time clinical professors. The method involved allowing the full-time clinical professors to earn a limited and specified amount of their income over and above the salary paid by the university hospital. This scheme was hotly attacked as unfair practice, putting the state into the private practice of medicine, providing "a tax-paid multimillion dollar workshop for clinicians."

In response to a resolution introduced by the Mississippi delegation a committee of the American Medical Association was named to make a study of problems related to clinical faculty appointments and the private practice of medicine. An interim report from this committee based on returns from questionnaires sent to medical deans, and state and county medical societies, was presented at the Annual Congress on Medical Education and Licensure in Chicago in February. The figures indicate that the practice under criticism is standard for most of the medical schools in this country. They show that in all the government schools and in all but a few private schools the amount of private practice permitted is strictly limited. Interestingly enough a large majority of the deans were of the opinion that provision for private practice for the so-called full-time faculty improves teaching and research. Most important, all but a few considered supplementation of fees from private practice as "very necessary" to attract and retain competent full-time teachers.

The replies from the county and state medical societies indicate that the majority approve the private practice of medicine by faculty members, are of the opinion that control of the private practice of medicine by the teaching institution is adequate and do not believe that the local medical society should assist in formulating medical school policies. However, reassuring as the over-all picture may be it is obvious that there are a few local spots where all is not bright. These trouble spots must not be allowed to threaten the whole structure of medical education. There are those in the medical profession who would use the full-time controversy to recapture control of the medical schools, which was yielded to the universities a half-century ago. This would be a sorry day indeed for those

who have labored to lift medical education out of the rut of vocational training.

Perhaps the most constructive use of the committee report would be to analyze the situations where medical schools and local medical societies enjoy the most cordial and co-operative relations and to see if certain principles could not be derived that would be generally applicable. A panacea that will banish the growing pains of infant medical schools is not to be expected but at least the successful experience of others may make the problem child appear to be not so much of a problem after all.

Possibly the greatest danger in such controversies is losing sight of the one reason for the existence of medical schools and hospitals and professors and private practitioners as well. This is and must always be the care of the patient through the agencies and by the methods that best serve this purpose. Under no circumstances can the physician afford even the appearance of putting any personal considerations above that obligation.

Reprinted with permission from the New England Journal of Medicine, May 24, 1956.

Fellowships for Vacation-Time Study

Since one of the primary objectives of modern medical education is to help the student establish sound habits of self-education, it is not surprising that student fellowships for vacation time study are rapidly increasing in number and variety.

For many years it has been customary for medical teachers with extensive research projects to set aside certain phases of these projects with the expectation that there would be students who would be interested in, and qualified for, conducting these phases during their long summer vacation period. This experience proved so successful that in many departments additional fellowships were offered, not all of them limited to assisting in the research of the senior investigators but some of them offered for original studies planned and carried out by the student with only the general guidance and advice of the senior men.

It is of considerable interest to find that in a questionnaire study made recently¹ that in 59 of the medical schools replying to the questionnaire the number of students on vacation-time fellowships had increased from a total of 288 in 1952 to a total of 1131 in 1955. The number of students on such fellowships that were financed by university funds (including grants) increased from 187 in 1952 to 425 in 1955. The number of such fellowships that were financed by agencies and private sources increased from 101 in 1952 to 706 in 1955.

These figures lend some support to the belief that (a) medical students in increasing numbers are willing to devote the greater part of their summer vacation to medical investigative projects if they can be modestly recompensed for the loss of their usual summer earnings; (b) medical college teachers have found by experience that the work of most of these summertime fellows is worth much more than the modest stipends provided; (c) students are finding that a summer of research is a rewarding and maturing experience well worth the small financial sacrifice required and (d) a number of organizations such as the National Founda-

tion for Infantile Paralysis are becoming convinced that funds invested in making it financially possible for undergraduate medical students to make a start in investigative work in that period of their career when their interests are first aroused, will, in the long run, bring a fine return. D.F.S.

1. Report from MARION C. MORRIS, Ph.D., Assistant Director of Professional Education, National Foundation for Infantile Paralysis, 120 Broadway, New York 5, N. Y.

Our Readers Write

Dear Editor:

Your January editorial entitled "Student Loan Funds Going Uncalled For," has come to my attention.

I have written three books on scholarships, fellowships and loans, and have recently been in touch with Mr. Sorter, chairman of the Englewood Rotary Club Fund. The problem you mention in this editorial no longer exists. As a matter of fact the Rotary Club now has more applications for their fund than they can assist.

Loan funds are in tremendous use when they are adequately administered and sufficient publicity is given to their activities. There are many funds listed in the three volumes I have written which are constantly in use. It has also been my good fortune to help administer various local funds in the Boston area and to serve as a national consultant to others. Many funds actually do not have enough money for all the applicants who come to them for help.

In my own opinion there is a vital need for more scholarships, particularly since more than 125,000 of our top students in this country each year are not able to go on to college because they do not have the economic wherewithal.

I do hope in some future issue of your magazine you will bring these facts to the attention of your readers. *Sincerely, S. Norman Feingold, Executive Director, Jewish Vocational Service of Greater Boston.*

NEWS DIGEST

1956 Teaching Institute

Plans are now underway for the AAMC's fourth Teaching Institute to be held November 7-10 at Colorado Springs. Representatives of 96 medical colleges in the United States, Puerto Rico, Canada and the Philippines will meet with a small group of specialists from other fields to discuss special problems in the screening of applicants to medical school.

The Institute theme is of timely concern to medical educators who are facing a period of increasingly heavy application activity. Institute chairman Dr. John T. Cowles, assistant for personnel services to the vice chancellor at the University of Pittsburgh School of Medicine, and Dr. Helen H. Gee, director of research for the AAMC—together with the Institute Planning Committee—have coordinated discussion areas to cover all aspects of the selection process from the liaison between medical colleges and undergraduate schools to the measurement of student characteristics indicative of professional promise.

The official list of participants from the ranks of medical education appears below:

Alabama, Robert C. Berson
Albany, Harold C. Wiggers
Arkansas, F. Douglas Lawrason
Baylor, James R. Schofield
Boston, Lamar Soutter
Bowman Gray, J. Maxwell Little
Buffalo, Oliver P. Jones
California S. F., Robert H. Crede
California L. A., Joseph F. Ross
Chicago Medical, Andrew H. Ryan
Chicago, Univ. of, Joseph J. Ceithaml

Cincinnati, Samuel A. Trufant
Colorado, Eugene S. Turrell
Columbia, Aura E. Severinghaus
Cornell, Lawrence W. Hanlon
Creighton, Richard L. Egan
Dartmouth, Rolf C. Syvertsen
Duke, Kenneth E. Penrod
Einstein, Abraham White
Emory, Evangeline Papageorge
Florida, George T. Harrell
Georgetown, Thomas J. O'Donnell
George Washington, John Parks
Georgia, Sam Singal
Hahnemann, N. Volney Ludwick
Harvard, Kendall Emerson Jr.
Howard, Robert S. Jason
Illinois, George Gee Jackson
Indiana, John J. Mahoney
Iowa, Woodrow W. Morris
Jefferson, Peter A. Herbut
Johns Hopkins, Kenneth C. Blanchard
Kansas, Vernon E. Wilson
Louisiana, William W. Frye
Louisville, Arch E. Cole
Marquette, John S. Hirschboeck
Maryland, Dietrich C. Smith
Medical Evangelists, W. E. Macpherson
Meharry, Daniel T. Rolfe
Miami, Homer F. Marsh
Michigan, Wayne L. Whitaker
Minnesota, William Maloney
Mississippi, T. J. Brooks Jr.
Missouri, M. D. Overholser
Nebraska, James P. Tollman
New York Medical, Ralph E. Snyder
New York University, Donal Sheehan
North Carolina, E. McG. Hedgpeth
North Dakota, Theodore H. Harwood
Northwestern, John A. D. Cooper
Ohio State, Rollo Baker
Oklahoma, A. N. Taylor
Oregon, Edward S. West
Pennsylvania, John McK. Mitchell
Pittsburgh, C. H. William Ruhe
Puerto Rico, E. Harold Hinman
Rochester, Leonard D. Fenninger
St. Louis, James W. Colbert Jr.
South Carolina, William M. McCord
South Dakota, Willard O. Read
Southern California, Peter V. Lee
Southwestern, Robert W. Lackey
Stanford, Lyman M. Stowe
Seton Hall, Charles L. Brown

State U. of N. Y., N. Y. C., James O. Pinkston
 State U. of N. Y., Syracuse, Davis Johnson
 Stritch (Loyola), Thomas P. Galarneault
 Temple, William N. Parkinson
 Tennessee, T. P. Nash, Jr.
 Texas, D. Bailey Calvin
 Tufts, Joseph M. Hayman, Jr.
 Tulane, Clifford G. Grulee, Jr.
 Utah, Philip B. Price
 Vanderbilt, Sam L. Clark
 Vermont, George A. Wolf, Jr.
 Virginia, Univ. of, Oscar A. Thorup Jr.
 Virginia, Med. Coll. of, George W. Bakeman
 Washington, U. of, Richard J. Blandau
 Washington, St. Louis, Robert J. Glaser
 Wayne, Gordon H. Scott
 Western Reserve, John L. Caughey Jr.
 West Virginia, Edward J. Van Liere
 Wisconsin, Otto A. Mortensen
 Woman's Medical, Irene E. Maher
 Yale, Thomas R. Forbes
 Alberta, J. S. Thompson
 British Columbia, John W. Patterson
 Dalhousie, Lloyd Macpherson
 Laval, Georges A. Bergeron
 Manitoba, Lennox G. Bell
 McGill, Donald Fleming
 Montreal, Jean Frappier
 Ottawa, J. Jacques Lussier
 Saskatchewan, J. Wendell Macleod
 Toronto, J. A. MacFarlane
 Western Ontario, G. E. Hobbs
 Philippines, Agerico B. M. Sison

Following is a list of Committee members in addition to those who are serving as participants from their medical schools.

George Packer Berry, dean, Harvard Medical School
 Paul S. Burnham, associate professor of psychology, Yale University
 William E. Cadbury Jr., dean, Haverford College
 John T. Cowles, assistant for personnel services to the vice chancellor, University of Pittsburgh
 Louis F. Fieser, professor of chemistry, Harvard University
 Daniel H. Funkenstein, clinical associate in psychiatry, Harvard Medical School
 Helen H. Gee, director of research, Association of American Medical Colleges
 Joseph K. Hill, executive secretary of the medical center, State U. of New York (Brooklyn)
 Normand L. Hoerr, chairman, department of anatomy, Western Reserve University School of Medicine

Thomas H. Hunter, dean, University of Virginia School of Medicine
 Carlyle F. Jacobsen, executive dean for medical education, State University of New York
 William Schofield, associate professor of psychology, department of psychiatry, University of Minnesota Medical School
 Charles R. Strother, professor of Clinical psychology, department of psychiatry, University of Washington School of Medicine
 Joseph Zubin, principal research scientist, New York State Department of Mental Hygiene

Other participants representing the supporting foundation and those participating in panel discussions and symposia are as follows:

R. F. Arragon, professor of history, Reed College
 John G. Darley, associate dean, University of Minnesota Graduate School
 Ward Darley, president, University of Colorado
 Roy M. Dorcus, dean, division of life sciences, University of California at Los Angeles
 Lester Evans, The Commonwealth Fund
 M. Ghanous, associate dean, American University of Beirut
 Murray Goldstein, National Heart Institute
 Joel S. Handler, clinical assistant professor in psychiatry, University of Illinois College of Medicine
 Francis W. Hibler, (partner) Rohrer, Hibler & Replogle
 E. Lowell Kelly, professor of psychology, University of Michigan
 William B. Kennedy, vice dean, University of Pennsylvania School of Medicine
 Schuyler G. Kohl, associate professor of obstetrics and gynecology, State U. of New York (NYC)
 Thomas R. McConnell, professor of Education, Research Project in Higher Education, University of California, Berkeley
 Dorothea S. Miller, assistant dean of students, University of Chicago Division of the Biological Sciences
 Norman F. Witt, professor of chemistry, University of Colorado School of Medicine
 Dael Wolfe, administrative secretary, American Association for the Advancement of Science.

MEND News

Thirty five schools are beginning the 1956-57 academic year with MEND affiliations. Ten new schools have been added this year and it is expected that further expansion will be at the rate of 10 schools a year. Colleges of medicine interested in adopting an affiliation are invited to contact either Dean Stanley Olson at Baylor University College of Medicine, or the National Coordinator, Bureau of Medicine and Surgery, Department of the Navy, Potomac Annex, Washington, D. C.

For this year, symposia are planned on: A Navy sponsored session on "Physiology of Diving and Submarine Medicine," including a short diving run in a submarine; an Army sponsored session on "Preventive and Social Psychiatry," and an Air Force sponsored session on "Man in an Airborne Environment."

Cerebral Palsy Grant

The United Cerebral Palsy Association, founded in 1949, has allocated more than \$2 million to research in the past seven years, according to the first public report issued by the United Cerebral Palsy Research and Educational Foundation. Scientists and teachers in 45 universities and research institutions are being supported by 60 different grants. The research program, directed by Dr. Glidden L. Brooks, emphasizes the mechanism and function of the human brain.

Medical Grant Advisors Meet

The first meeting of an advisory council appointed to assist the Public Health Service in its medical research program, was held September 24-25. Purpose of the council is to review applications for grants filed by medical schools, research hospitals and other research institutions who come under the \$90 million three year program authorized by Congress.

Members of the council include: Dr. George N. Aagaard, dean of the

school of medicine of the University of Washington; Eugene N. Beesley, president of Eli Lilly and Company; Dr. Thomas H. Hunter, dean of the school of medicine at the University of Virginia; Dr. Carlyle Jacobsen, executive dean for medical education at the State University of New York; Dr. Paul C. Kitchin, professor of dental histology and embryology at the school of dentistry, Ohio State University.

Tuberculosis Fellowships

The National Tuberculosis Association, through its medical section, the American Trudeau Society, is offering fellowships in the field of respiratory diseases and tuberculosis to assist in the training of investigators and teachers of medicine.

Candidates holding the degrees of M.D., Ph.D. or Sc.D., are eligible for awards making possible the continuation of graduate study in the field of respiratory diseases in an approved hospital or medical center. Such studies may be directed toward teaching or research. Residency in an approved hospital under such a fellowship will be credited by the American Board of Internal Medicine toward certification in internal medicine and pulmonary diseases.

Predocutorial fellowships are also offered to graduate students who hold a bachelor's degree and are working on a research project for an advanced degree other than M.D.

All awards are determined by individual circumstances and granted for one year with no more than two renewals considered. Fellowship applications must have the approval of the head of the department under whom the Fellow expects to work, and applications must be received by January 1.

For further information, address inquiries to the Director of Medical Education, American Trudeau Society, c/o The Henry Phipps Institute,

Seventh and Lombard Streets, Philadelphia 47, Pa.

• **CIBA Awards New Grants**

A total of \$140,000 has been awarded by the CIBA Pharmaceutical Products Inc., in research grants during the first six months of 1956. Grants went to research workers and institutions throughout the United States for the purpose of clinical and laboratory investigation. This year's awards bring the total amount of research grants awarded by CIBA since 1950 to \$1,885,000.

New Air Force Director

Brig. Gen. M. S. White, USAF (MC) has been named the new director of Medical Staffing and Education for the Air Force Medical Service. He is stationed in the office of the Surgeon General USAF, Washington, D.C. Until his present appointment, he was air surgeon of Tactical Air Command at Langley Air Force Base, Virginia.

New Anesthesiology Journal

A new journal in the field of anesthesiology is scheduled for publication in 1957. It will appear bimonthly

and the first number will be issued in February. Entitled "Survey of Anesthesiology" and published by the Williams & Wilkins Company, the journal will cover international periodical literature on its subject. Dr. C. Ronald Stephen, head of the department of anesthesiology at Duke University, is the editor.

Urology Award

The American Urological Association offers an annual award of \$1,000 for essays on the result of some clinical or laboratory research in urology. The first prize is for \$500, second prize \$300 and third prize \$200. Competition is limited to urologists who have been graduated not more than 10 years, and to hospital interns and residents doing research work in urology. The first prize essay will appear on the program of the forthcoming meeting of the American Urological Association to be held at the Hotel William Penn, Pittsburgh, Pa., May 6-9, 1957. Essays must be in the hands of the executive secretary before December 1, 1956.

For further information, write William P. Didusch, Executive Secretary, 1120 North Charles St., Baltimore 1, Md.

College Briefs

Albany

Cancer teaching and research will benefit from grants totaling \$35,250 received from the Public Health Service. The cancer teaching division received \$25,000 and \$10,250 was granted to continue research for rare trace elements in cancer tissue. Both grants will be administered by Dr. KENNETH B. OLSON, assistant professor of medicine and director of the sub-department of oncology.

A new department of microbiology

has been formed as an outgrowth of the departments of bacteriology and pathology. Its primary duty will be to conduct microscopic studies of bacteria, viruses, fungi and parasites in relation to infectious diseases. Dr. SCOTT V. COVERT has been named professor and chairman. In addition to its basic aim of microscopic research and medical student teaching, Dr. Covert's staff will assist in the training of medical technologists at Albany Hospital and in the teaching of nurses at the School of Nursing.



Aerial view shows the back of the new \$14,500,000 basic sciences building of the State University of New York Downstate Medical Center in Brooklyn. In the background are some of the buildings making up the Kings County Hospital Center. Extending for a distance of three blocks, the basic sciences building is 11 stories high in its tower portion and seven stories high at each end. It contains 800 rooms to provide offices and laboratories for 275 full time faculty members and instructional facilities for first and second year students. Modern innovations include removable steel partitions for room shifting; escalators, air conditioned animal quarters, and a closed circuit built-in television system.

Chicago Medical

Grants totaling \$17,613 have been received. A \$7,613 grant from the National Cancer Institute has been awarded to Dr. HERBERT I. HADLER of the division of oncology, and a \$10,000 grant from the National Science Foundation has been given to Dr. A. R. GOLDFARB for research on the basic properties of the peptide bond.

U. of California, S. F.

Dr. LEON GOLDMAN has been appointed associate dean. Dr. Goldman is professor of surgery and has also recently become chairman of the department of surgery. Dr. ROBERT H. CREDE, associate professor of medicine, has been appointed assistant dean, as has Dr. MALCOLM S. WATTS, assistant clinical professor of medicine.

Dr. Goldman will represent the dean and act for him in his absence and will be responsible for interns, residents, postgraduates, and post-

doctoral training. Dr. Crede will be responsible for student admissions and student matters, and Dr. Watts will handle professional and public relations.

Duke

The new \$3,386,000 seven floor addition to the Duke Hospital is now entering final stages of construction and is expected to be completed by March 1957. Under construction since January 1955, the addition will provide 109 new beds, expanded out-patient facilities and many other improvements, making Duke Hospital second in size only to Johns Hopkins among private general hospitals in the South. The addition will also open up new classrooms for students.

U. of Florida

Dedication ceremonies for the Medical Sciences Building, first unit of the J. Hillis Miller Health Center, have been scheduled for October 12-13. The weekend's activities will in-

clude addresses by Dr. DETLEV BRONK of the Rockefeller Institute for Medical Research, and Dr. WENDELL STANLEY, head of the University of California's virus laboratory.

The first medical class has been using the center, as has the college of nursing, whose headquarters are still under construction.

Jefferson

Dr. ROBERT A. MATTHEWS has returned to become professor of psychiatry and also to serve as Commissioner of Mental Health for the state of Pennsylvania. Dr. Matthews has been head of the department of psychiatry at Louisiana State University.

Kansas

Plans are being made for the first uses of a \$100,000 grant from the W. K. Kellogg Foundation made to promote the use of color television by the medical center. The grant was given to be used on the basis of \$20,000 a year for five years under the direction of Dr. DAVID S. RUHE, head of the department of audiovisual education. Television instruction has been used at the school since 1949. The Kellogg grant makes possible the addition of needed technical personnel and equipment; it will make possible mobility of equipment, provide lens-centered lighting, permit exploring the possibilities of endoscopy, fluoroscopy and microscopy in television demonstrations. In the future a "scrambled image" television course for practicing physicians will be undertaken.

Medical Evangelists

The National Institutes of Health has granted \$13,432 for the first year of a two year study in the screening of plant and animal extracts for antineoplastic activity to Dr. MERVYN HARDINGE and Dr. LESTER LONERGAN of the department of pharmacology.

Dr. FRED B. MOOR, chairman of the department of physical medicine, and

Dr. ERNEST C. CHRISTENSEN, associate professor of physical medicine, attended the International Congress on Physical Medicine which convened in August in Copenhagen, Denmark.

NYU-Bellevue

A grant of \$82,000 to support a proposed project to learn more about the causes of deafness has been made by the Alfred P. Sloan Foundation, Inc. to the department of otolaryngology. Dr. JOSEPH E. HAWKINS Jr., is director of the project.

N.Y. Med. Coll.

Dr. JONAS N. MULLER (opposite) has been appointed director and professor of the department of preventive medicine, public health and industrial hygiene at New York Medical College. Dr. Muller succeeds Dr. Helen Wallace who is now associated with the school of public health at the University of Minnesota. Dr. Muller has been connected with the American Public Health Association and was also an associate professor of public health at Yale University School of Medicine.



Michigan

A special legislative grant of \$50,000 has been awarded to make possible the study of the inner geography of the body as a diagnostic device. Known under the general term of angiography, the process will be directed by Dr. FRED J. HODGES, chairman of the department of radiology and chief radiologist at the university hospital. The funds will be used to secure the necessary special equipment and facilities.

Dr. ROBERT J. HORTON of the school of public health department of epidemiology, has announced a study under his direction in which a special

team will conduct an intensive community health research project on a small city, as yet unnamed.

This will be the first time such a study has been undertaken. A team of physicians, engineers, epidemiologists, biostatisticians, sociologists, nurses, health educators and industrial hygienists, will work together on this comprehensive plan. The study will take a number of years to complete. The initial fund of \$30,000 used to start it is part of a special grant of \$300,000 made to the school from the state legislature for research in the human resources of Michigan.

Mississippi

The department of surgery has added three new faculty members. They are: Dr. WILLIAM F. ENNEKING, formerly of the University of Chicago School of Medicine, to associate professor of orthopedics; Dr. CURTIS P. ARTZ, formerly of Baylor University, and director of the U.S. Army Hospital at Fort Sam Houston, to associate professor of surgery; Dr. JORGE RODRIGUEZ, formerly of St. Mary's Memorial Hospital, to assistant professor of surgical anatomy and associate in research.

Stanford

Federal, state, local and school officials participated in the groundbreaking ceremonies held on September 11 for the joint Palo Alto-Stanford Hospitals, key structure of the \$22 million medical center scheduled to be built. Construction is also planned to start this fall on the rehabilitation center building, another of the initial units.

Northwestern

Four public health research grants totaling \$24,000 have been awarded to the dental school by the National Institutes of Health.

Tennessee

Dr. NICHOLAS DiLUZIO, instructor

in physiology, has been awarded research grants totaling \$28,712 for support of his studies on the harmful effects of exposure to radiation and investigations of fat metabolism. The National Heart Institute awarded him \$20,512 and the Atomic Energy Commission granted \$6,700. The remaining \$1,500 was contributed by the Memphis Heart Association.

Dr. ROBERT C. RENDTORFF, assistant professor of preventive medicine, has been awarded a \$33,623 three year research grant by the National Institute of Allergy and Infectious Diseases, of the Public Health Service. Dr. Rendtorff will study virus and parasite relationships.

Temple

Dr. THOMAS M. DURANT has been appointed professor and head of the department of medicine. Dr. Durant, a member of the faculty and medical staff since 1936, assumes the chair of medicine formerly occupied by Dr. RICHARD A. KERN, now emeritus.

Wayne

A total of \$353,163.85 in research and education grants was made available this fall. Largest single grant was \$51,892 made by the American Cancer Society for research entitled "Experimental Pulmonary Cancer Induced by Compounds of Beryllium in Albino Rats" directed by Dr. Arthur Vorwald. In addition the Public Health Service awarded the school and the college of nursing \$338,247 for 26 different projects; the Michigan Heart Association gave \$69,881 in 10 research grants; the Kresge Foundation gave \$39,000 for neurological research; Dr. ALFRED J. BOLLET, Markle Scholar, received \$24,630 from the Michigan chapter of the Arthritis & Rheumatism Foundation for continuation of arthritis research; and the Public Health Service gave a \$25,000 grant to continue undergraduate training in psychiatry.

Audiovisual News

Old Wax Models Available

A collection of 59 wax models of medical and historical value (circa 1910) is available from the Marquette University College of Nursing. The models cover industrial diseases for the most part and are imported from Berlin. They bear a metal inscription: "Professor Dr. W. Benninghoven."

Because of housing pressures the college would like to dispose of the models and interested persons should contact the Office of the Dean at 3058 N. 51st Street, Milwaukee 10, Wis.

Highroads to Health TV Series

The educational television efforts of Kansas University have been initiated with eight lay programs entitled the HIGHROADS TO HEALTH. The Kansas University Medical Center has collaborated with the Television Committee of the University in producing the series; Dr. David S. Ruhe, head of the department of audio-visual education of the Medical Center, and Dr. Bruce A. Linton, head of the University Television Committee have acted as joint producers. Various Kansas and Missouri health agencies have collaborated in development of individual programs.

The complete series includes: THE HEART'S BLOOD (on coronary artery disease) with Kaw Valley and Kansas City Heart Associations; THE FACE OF CANCER, with Kansas and Missouri Divisions of the American Cancer Society; DOCTORS FOR KANSAS (on the Kansas Rural Health Program); THE HEART CRIPPLER (on rheumatic fever), with the Children's Convalescent Center, the Kansas State Board of Health, the Kansas City Heart Association, and Wyeth Laboratories;

THE SUMMER SCOURGE (on poliomyelitis), with the Kansas State Board of Health, the National Foundation for Infantile Paralysis; BAD TEETH-GOOD TEETH (on fluoridation), with the Kansas City University College of Dentistry and the Kansas State Board of Health; THE KANSAS-MISSOURI DISEASE: HISTOPLASMOSIS, with the Communicable Disease Center, Public Health Service and Kansas Tuberculosis and Health Association; and BORN WITH A DEFECT, story of children with harelip and cleft palate anomalies, with Kansas City University College of Dentistry. All programs were telecast through the local ABC Network station, KMBC-TV, Kansas City. Several programs have been replayed over other stations in Kansas. Several programs are to be repeated for kinescope recording and distribution.

International Medical Film Program

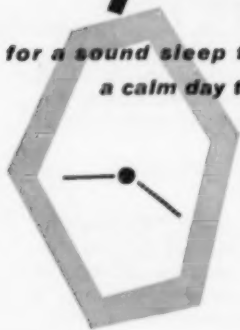
A special program of foreign-made medical films will be an added feature of the 106th Annual Meeting of the American Medical Association to be held in New York City in June 1957.

This film program will be presented in cooperation with Johnson and Johnson, New Brunswick, N. J., as a part of the scientific program, bringing before the doctors attending the meeting outstanding motion pictures produced abroad dealing with many aspects of medical science.

Films for the program will be selected from applications submitted by authors and producers from other countries. The assistance of United States Government agencies, Johnson and Johnson's foreign affiliates and



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international medical organizations will be utilized to publicize and aid in making this a most worthwhile program.

Applications for the program and further information can be obtained from the American Medical Association, Motion Pictures and Medical Television, 535 North Dearborn St., Chicago 10, Ill.

Complications of Diabetes Mellitus (Slide Set)

A set of 27 2" x 2" kodachrome slides entitled "Complications of Diabetes Mellitus" is available from Eli Lilly Co. A brief description of each slide is provided. The slides are based on an article entitled "Complications of Diabetes" which appeared in "Physician's Bulletin," April 1956.

Electrocardiographic Textbook

Available from the American Heart Association is an electrocardiographic textbook in two volumes, for teaching and testing electrocardiographic interpretations.

Volume I contains two parts: Part A, Electrocardiograms with Questions; Part B, Questions on Electrocardiographic Interpretation. Also included in Volume I is an Appendix of tables useful in interpretations and the Index to both volumes.

Volume II is also divided into parts A and B. Answers to the questions and detailed discussion of the tracings presented in Volume I are on the corresponding pages in Volume II. In addition there is supplementary clinical information, X-rays, and serial electrocardiograms.

The textbook was edited by Travis Winsor, M.D., and reviewed by a panel of 35 experts. It was prepared under the direction of the Committee on Professional Education of the American Heart Association.

The two-volume set is available from local heart associations or their national office, 44 East 23rd Street, New York 10, Price \$5 postpaid.

Medical Motion Picture Workshop

The Calvin Company of Kansas City in cooperation with the Veterans

Administration will hold a medical motion picture workshop on February 4, 5 and 6, 1957. The workshop will be at the Calvin Company in Kansas City.

The purpose of the workshop is "To provide a broad view of the use and value of films in the various fields of medicine, present factual information regarding film production, and stimulate the intelligent application of film." An optional fourth day for closed-circuit television is tentatively planned.

Calvin workshop materials will be presented by the Calvin staff and guest speakers will include medical film producers.

Medical school film producers are invited. The Veterans Administration will send 85 men.

The attendance fee is \$60 for all sessions including the banquet. Application for attendance may be made after December 1 by writing to the Calvin Company at 1105 Truman Road, Kansas City, Mo.

Cardio-Views, Series II, Cardiovascular System

Also available from the American Heart Association is a set of 24 3-D Kodachrome views of the heart, great vessels and cerebral circulatory system. Structures are identified with numbered markers and a brief description of the view is printed on each card. The valves, interior chambers of the heart, and vascular changes are all visualized. Price \$5, postpaid (Cardio-viewer not included may be bought separately at \$1.25 postpaid.)

"Health Careers"

A new film entitled "Health Careers" has been released by the National Health Council. Aimed at school and community groups, it shows career opportunities in health and raises questions designed to stimulate discussion.

The film is 16 mm., black and white, sound, 13½ minutes. It will be loaned free or sold for \$25. For further information write to Health

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Film Reviews

Myasthenia Gravis

27 min., sd., color, 16 mm., 1955.

After prolonged titles, a clinic provides the setting for a talk on myasthenia gravis. A patient demonstrates her typical presenting symptoms; she reenacts the case history of onset, with its sudden muscle failures, weaknesses, diplopia, dysphagia, and with its missed diagnosis by a doctor. Incidence is reviewed on graphs, and animation shows pathology. Shown are how to make an accurate Dx utilizing the ergograph, neostigmine, atropine and Tensilon; differential diagnosis with the different types and stages of myasthenia; Rx with drugs, the side reactions and modifying conditions in the use of Mestinon. The use of Mysuran is demonstrated, with the historic role of ephedrine. Cholinergic crises and their management, and thymectomy in a young woman are shown.

This illustrated lecture on an interesting and unusual disease covers old and new knowledge, and includes the new agents of management. It is accurate and represents excellent case material and up-to-date information. The film's design of the spurious doctor-intern interview only underlines the essentially verbal dominance of the sound track. Knowledgeable film direction is somewhat masked by the lack of visual continuity.

As an essay on myasthenia gravis, the film will be useful to students of medicine. The film should call additional attention to the disease, the newer drugs and to modern concepts of management. DSR, with K.U.M.C. Panel, February 1956.

Audience: Students of medicine, practitioners.

Production Data: Sponsor: F. Hoffman-La Roche & Co., Producers: Sturgis-Grant Productions, New York; Scientific Advisors: Medical Advisory Board of Myasthenia Gravis Foundation.

Distribution: Myasthenia Gravis Foundation, 2 E. 103rd St., New York, N. Y., Free Loan; Sale: \$200.

Principles of Respiratory Mechanics (Part II)

25 min., sd., color, 16 mm., 1955.

Physiological and anatomical phenomena in the human lung are shown by animation and laboratory devices. The accessory muscles' role is shown in a polio case. Pulmonary vital capacity

Films Approved by ACS

The American College of Surgeons includes their list of films approved by them in the September-October issue of the *Bulletin of the American College of Surgeons*.

Reprints of "Medical Motion Pictures Approved by College in 1956" are available upon request from the Committee on Medical Motion Pictures, American College of Surgeons, 40 East Erie St., Chicago 11, Ill. (no charge for single copy).

Equipment Directory

The third edition of *The Audio-visual Equipment Directory* will be available on November 1. The directory is compiled and published by the National Audio-Visual Association. It is a guide to current models of projectors, reproducers, recorders and accessories. Specifications and price are given and each model is shown in a photograph.

Available from the National Audio-Visual Association, 2540 Eastwood Ave., Evanston, Ill. (\$3.50 cash, \$4 on invoice).

Tissue Films to be seen Outside U.S.A.

Abbott International has purchased 40 prints of "The Hela Cell Strain," with English narration for international showing. In addition, a Spanish version is being completed.

The Hela Cell Strain is the first of a series of short teaching films on Living Human Cells in Culture being produced by the Medical Audio-Visual Institute on a grant provided by Abbott Laboratories. Research footage of the Tissue Culture Laboratory of the University of Texas—Medicine Branch is being utilized, with Dr. C. M. Pomerat as the author.

Two additional films, "Microglia" and "Oligodendroglia" are being released this month.



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is demonstrated via spirometer, animation and patients with pulmonary fibrosis and polio. With a cat-lung preparation the relative effects of intra- and extrapulmonary pressures is explored. Pressure-volume relationships are graphed and related to the newborn and the surgical case. Exercise and its respiratory volume alterations are related to asthma and emphysema.

This illustrated lecture film covers many critical data of respiratory physiology and pathology. Certain of the laboratory demonstrations are splendid examples of teaching materials. Film-wise the motion picture is unimpressively managed, with little sensation of sympathy for or understanding of the film's vital scientific material. Directorial misjudgments of taste and production, and less than apt animation do not help the over-all impression.

Useful material from an obviously excellent laboratory, though not well realized in lucid production, may find valuable service in the teaching of physiology. DSR, with K.U.M.C. Panel, February 1956.

Audience: Students of physiology.

Production Data: **Sponsor:** National Foundation for Infantile Paralysis; **Producers:** Science Pictures, Inc., New York; **Scientific Advisers:** Benjamin Ferris, M.D., Jere Mead, M.D., Edward Radford, M.D., and James L. Wittenberger, M.D., Department of Physiology, Howard University School of Public Health.

Distribution: Division of Professional Education, The National Foundation for Infantile Paralysis, 120 Broadway, New York, N. Y., Loan.

The Dynamics of the Tubercle

28 min., sd., color, 16 mm., 1956.

An area of connective tissue arising in a matrix of coagulated blood in the ear of the rabbit serves as an arena in which appear the events during at least one phase of histogenesis, the pathogenesis of the tubercle, and the contest between infection and chemotherapy. The area is made available for study with microscope and motion picture

camera by the introduction of a plastic chamber into the animal's ear. Within the chamber lies a test object which can be studied over a period of months and in which validity is impaired neither by anesthesia nor by gross insult from a foreign body. Initially the tissue under study is normal enough to serve as a satisfactory criterion. After inoculation of the ear chamber with bovine tubercle bacilli (to establish primary infection) the tissue is serially studied for varying periods of time. The consequences of primary infection progress from a primary localized response of a mild inflammatory sort to necrotic destruction of the entire visualized field. Thus the dramatic responses in all types of vascular beds are brought to light in chronological order in such a fashion that the evolution of the tubercle, at least as it relates to vessels, becomes a truly dynamic phenomenon. The distinction between the consequences of primary and secondary infection is emphasized by the greater speed with which secondary tuberculous infection overwhelms tissue. That section of the film devoted to the response of the infected test object during chronic medication of the animal with chemotherapeutic agents demonstrates both the precarious balance between therapeutic success and failure and the need for long-continued therapy.

The conception of the idea, the research it involved, and the production of the film are top-flight. The use of diagrammatic explanations imparts clarity. Any medical worker, clinical or experimental, will gain profit and pleasure from this film. F. Allison Jr., M. E. Morrison, T. D. Norman, and J. C. Rice, University of Mississippi Medical Center, Jackson, Miss., June 1956.

Production Data: **Sponsors:** Pfizer Laboratories; **Producers:** Churchill-Wexler Film Productions; **Scientific Advisers:** Robert H. Ebert, M.D., and William R. Barclay, M.D., University of Chicago; **Director:** David S. Ruhe, M.D.

Distribution: Pfizer Laboratories, Film Library, 630 Flushing Ave., Brooklyn 6, N. Y., Loan.

About The Care of Chronic Illness

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Book Reviews

Campbell's Operative Orthopaedics

Third Edition, two volumes. By **J. S. Speed, M.D.**, and **Robert A. Knight, M.D. C. V. Mosby & Co., St. Louis, 1956. \$40.00.**

The third edition of "Operative Orthopaedics" is unquestionably one of the most important contributions to the field of orthopaedic surgery in print at the present time, and it will undoubtedly receive the universal popularity of the earlier editions.

The editors and contributors have attempted with remarkable success to perform the impossible task of summarizing the current concepts of the entire field of operative orthopaedic surgery into two volumes. They have sought to point out their preferences and indications for the various procedures rather than merely to describe the techniques.

The third edition is over 400 pages longer than the second and has been extensively revised and improved. Considerable material on newer procedures such as intramedullary nailing and insertion of femoral head prostheses has been added in a clear and concise manner. An excellent addition is the opening chapter on surgical physiology which includes a discussion of the treatment of cardiac arrest. There is a brief but commendable discussion of the newer antibiotics and the use of the steroids in the chapter on pre- and post-operative care. The chapter on surgical approaches has been expanded and revised considerably and is most excellent. There are certain unavoidable omissions such as the posteroinferior approach to the temporomandibular joint and certain approaches to the anterior portions of the cervical and lumbar vertebrae. These may be of such limited interest, or in use for such a short time as to be considered by the editors as beyond the scope of the book.

This edition follows the same format as in the second edition and contains a very good bibliography and author-subject-index. The authors admit a general lack of inclusion of foreign material which does not seriously detract from the greatness of this "American Bible" of orthopaedic surgery.

In spite of its cost it should be owned by every practicing orthopaedic surgeon

and certainly every medical library of importance. Its value and necessity to those training in orthopaedic surgery can hardly be overestimated.

Wayne O. Southwick, *Johns Hopkins*

Radium Therapy

C. W. Wilson, M.Sc., Ph.D., F. Inst. P., The Williams and Wilkins Co., Baltimore, 1956, 286 pp. with index.

The first and very widely accepted edition of this volume appeared in 1948. Since that time developments within the field of atomic physics have considerably altered the radiotherapist's armamentarium. Radioactive isotopes of cobalt, gold, iridium, tantalum, caesium, strontium and other elements are now available and increasingly used as isolated sources of radiation. While these materials have not altered fundamental physical or biological laws, they have definitely broadened the scope of physical problems in therapy. Considerable interesting and pertinent physical data concerning the properties and practical use of these materials have been amassed over the last decade. This second edition is in part a response to this material.

In the present work, the contents of the original edition have been retained essentially unchanged. The physical aspects of radium therapy are completely covered as before. New material comprises the physics of radiotherapy with newer isotopes employed as isolated, discrete sources directly under the control of the therapist. No consideration is given to materials administered by oral, intravenous or intraperitoneal routes.

The book, therefore, largely represents a consideration of the physical aspects of radium and other radioactive materials which are similarly used for surface, cavity, interstitial or directed gamma ray beam therapy. The excellent qualities of the first edition have been maintained and carried over to the new material. The volume now represents a concise and lucid exposition of the fundamental physical properties, biological absorption, dosimetry and protection problems involved in the use of the isotopes indicated above. While mathe-

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matics must play a role in such a treatise, the book is not highly technical and should be readily understood by most. Treatment is short and practical but surprisingly complete. All physicians, physicists and students concerned with these materials will find it most valuable.

Printing and format are clear and readable. The binding is clearly not commensurate with the quality of the work.

William R. Christensen, *Utah*

Gestation

Edited by **Claude A. Villee**. Sponsored by **The Josiah Macy, Jr. Foundation**, New York, New York, 1956. 260 pp. with index.

This 250-page book is a beautifully edited, stenographic report, with very adequate picture and chart material, of the proceedings of the Second Conference on Gestation sponsored by the Josiah Macy Jr Foundation. Dr. Frank Fremont Smith, as usual, ably and unobtrusively moderates the conference which deals with research in the field of gestation. Seven topics are discussed: Self regulatory functions during gestation and lactation, social reactions of pregnant and lactating rats, delayed implantation in mammals, pressures in the fetal circulatory system of a sheep,

and three separate aspects of uteroplacental circulation in the human and other mammals.

The book is essential for all those who do research of any kind in the field of gestation. The discussion of the various subjects by the distinguished members and guests of this conference often takes an unexpected turn, covering many fields only loosely allied to the subject under discussion. This plus the fact that the material is handled in a very critical manner by people who have a tremendous background of information makes for most interesting reading.

The book will be of particular interest to those who teach and practice obstetrics and gynecology because of Dr. Boyd's presentation on the morphology and physiology of the uteroplacental circulation. Spanner's "marginal sinus" concept, which is so frequently used by the clinician in connection with antepartum and intrapartum bleeding, would seem to be completely exploded by Dr. Boyd's painstaking research. As Dr. Reynolds says at one point "How can Spanner be so wrong?"

This book serves to emphasize the fact that research possibilities are limitless in the field of gestation.

Ben Peckham, *Wisconsin*

Published May 7, 1956: Volume 7

ANNUAL REVIEW OF MEDICINE

David A. Rystand, Editor

611 pages

25 chapters

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• **DIRECTOR OF EDUCATION AND RESEARCH:** Position available immediately to coordinate and direct teaching and research program for residents, internes and clinical clerks on a full time basis. Opportunities for personal research. M.D. or Ph.D. Private clinic with affiliated hospital and medical school affiliation. Apply to administrator, Guthrie Clinic, Sayre, Pa.

• **BIOSTATISTICIAN:** A vacancy exists in the newly organized division of biostatistics, department of public health, faculty of medicine, University of British Columbia, Vancouver 8, B.C., Canada. Applicants must have a basic degree in arts or science and should have had considerable training and experience in statistics. Preference will be given to those with a postgraduate qualification in biostatistics. The appointee will be required to organize a program of research and teaching. Salary according to qualifications and experience. Address: Dr. James M. Mather, Professor of Public Health, at the above address.

• **PEDIATRIC STAFF OPENING:** Two positions are available. One having to do specifically with the care of the premature and newborn and consultant in crippled children's services; another involves the position of associate medical director in charge of hospital, as well as general teaching. Both positions involve heavy teaching and administrative duties. Some time for limited research. Address: Dr. Henry B. Streng, Department of pediatrics, The University of Oklahoma, School of Medicine, 800 Northeast Thirteenth Street, Oklahoma City 4, Oklahoma.

• **TRAINERSHIP IN RHEUMATOLOGY:** Available immediately in university center. Participate in clinical investigation, diagnostic and therapeutic program. Address: V-51.

• **NEUROSURGEON:** Lecturer in neurosurgery and consultant for hospital. Appointment must be taken up within the next years but further training might be required before assuming full responsibility. Send full curriculum vitae and three copies each of six testimonials. Address: Professor of surgery, Queen's University, Kingston, Ontario.

• **PROFESSOR OF ANATOMY:** The chair of anatomy will be vacant September, 1957. Salary range, \$7,000 to \$9,500, depending on qualifications and experience. Address: Dean of medicine, Queen's University, Kingston, Ontario.

• **CLINICAL AND RESEARCH AUDIOLOGIST:** For new hearing center. Address: Dr. Fred Harbert, Jefferson Medical College and Hospital, Philadelphia, Pa.

To aid in solution of the problem of faculty vacancies, MEDICAL EDUCATION will list persons and positions available, as a free service. The school department or person may have the option of being identified in these columns or of being assigned a key number for each position listed. Mail addressed to key numbers will be forwarded to the person or department listing the request.

Information for these columns should reach the Personnel Exchange, Journal of Medical Education, 185 N. Wabash Ave., Chicago 1, Ill., not later than the 10th of the month which precedes the month in which the listings will appear.

Personnel Available

• **MEDICAL JOURNALIST:** Woman writer and photographer. Medical social work education. Experienced in magazine layout and production. Seeks publicity or magazine position in midwest or western area. Address: A-247.

• **PHARMACOLOGIST:** Ph.D. 29, atomic research, publications, some teaching. Entering junior year of medical school. Desires part-time academic post to complete medical program. Address A-321.

• **PHYSIOLOGIST-ZOOLOGIST:** Ph.D., 34. Training and interest in endocrinology and cell physiology. Presently engaged as research associate in biochemistry. Desires academic and/or research position. Address: A-232.

• **BIOCHEMIST:** Ph.D. Now assistant professor of biochemistry at medical school. Fifteen years' teaching experience, over 40 publications in the field of enzymes, proteins, lipids and biochemistry of cancer. Seeks position in institution with good research facilities and appropriate remuneration. Excellent references supplied on request. No regional preferences. Address: A-235.

• **MICROBIOLOGIST:** Ph.D., 31, married. Five years teaching experience in general and medical bacteriology, immunology, mycology, and virology. Total of six years experience in virus and cancer research. Presently engaged in full-time virus research. Desires faculty appointment (asst. prof.) with teaching and research opportunities. Address: A-237.

• **INTERIEST:** 39. Especially interested in metabolism. Previous experience with isotopes. Certified by American Board in internal medicine. Fellow of American College of Physicians. Would be interested in heading section or department in geographical full-time teaching position with a medical school. Assistant professor of medicine past two years. Outstanding record including numerous publications in the past. Address A-238.

• **OBSTETRICIAN-GYNECOLOGIST:** 38. F.R.C.S. (C). Canadian. Married. Board eligible. Presently holding teaching fellowship in Canadian university. wishes part or full time teaching appointment in American university. Address: A-239.

• **VETERINARY PATHOLOGIST-BACTERIOLOGIST:** D. V.M., Ph.D., 37, male, married. Background in comparative pathology, infectious diseases and mycology. Nearly 6 years research experience and part time teaching. Assistant professor, member of a number of scientific organizations. Publications. Desires position primarily research with minimum of teaching. Would consider medical school appointment with opportunity to complete requirements for M.D. degree. Address: A-240.

• **PUBLIC RELATIONS DIRECTOR:** Top medical center experience. Seeks growth opportunity in medical administration. Address: A-241.

• **OPHTHALMOLOGIST:** 32. Three years approved residency in ophthalmology from a large teaching general hospital. Desires teaching or research fellowship in ophthalmology at a medical-hospital institution or preceptorship under ophthalmologist. Address: A-242.

• **BIOCHEMIST:** Ph.D., Columbia University, 1940. Good background in teaching and research. Associate professor of biochemistry; numerous publications on chemistry and metabolism of steroid hormones. Presently completing two year visit in English medical college. Available USA, fall, 1956. Address: A-243.

• **PHYSIOLOGIST-PHARMACOLOGIST:** Ph.D. 36, married. Metropolitan N. Y. area only. Full or part-time teaching and/or research position in medical or dental school or membership in hospital research team. Seven years teaching undergraduates biology, chemistry, zoology, physiology, anatomy; dental students physiology, pharmacology; medical students pharmacology. Faculty member of eastern medical school. Four years in hospital research laboratories. Publications. Address A-244.

• **MEDICAL WRITER:** Ph.D. in physiology with research experience and publications. Desires full or part-time work writing abstracts, editing manuscripts and assisting with medical publications. Address: A-243.

• **PHYSIOLOGIST-PHARMACOLOGIST:** Ph.D. Research experience. Publications. Desires opportunity to affiliate with laboratory doing research in endocrinology, reproduction or pharmacology. Interested in institution for which senior post-doctoral fellowship can be granted by National Science Foundation. Metropolitan N. Y. area only. Address: A-246.

• **MICROBIOLOGIST:** Ph.D., 34, male, married. Background in host-parasite relationship in infectious disease, radiation, microbiology. Three years research and part-time teaching experience. Desires position in teaching and research. Would consider medical school appointment with opportunity to complete requirements for M.D. degree. Address: A-248.

• **PHARMACOLOGIST:** 28. Will complete Ph.D. work by October 1956. Have completed 2½ years medical school and passed first half state and national board examinations. Experience in teaching in pharmacology laboratory. Research in endocrinology. Desires part time teaching or research position in a medical school with opportunity to complete work for M.D. degree. Address: A-250.

• **PEDIATRIC INSTRUCTOR:** 64. Graduated from Russian medical school, have 32 years teaching experience in Russian and Austrian medical schools, hospitals as associate professor, later head of medical staff. Address: A-252.

• **THORACIC SURGEON:** British subject, F.R.C.S. 34. Postgraduate work includes 3 years in U.S. Familiar with cardiac catheterisation and cardio-pulmonary functional investigations. Experience has included basic research and lectureship in surgical anatomy. Address: A-256.

• **INTERNSIST-CARDIOLOGIST:** 37. Seeks change of location. Presently director of cardiopulmonary laboratory of large university hospital. Have active research program. Also direct cardiac clinic and teaching program. F.A.C.P. Certified in sub-specialty. Interested in teaching, administration, research. Address: A-251.

• **PHYSIOLOGIST-CYTOLOGIST:** Ph.D., male, 30, married. Background in mammalian physiology, zoology and anatomy. Desires opportunity for research with or without teaching, in the East. Interest and experience in invertebrate-vertebrate material, problems in nuclear and cytoplasmic inter-relationships, cytochemical studies on nuclear changes during tumor formation using cytospectrophotometry, electron microscopy. Some teaching experience in mammalian physiology. Address: A-249.

• **MEDICAL BACTERIOLOGIST:** Ph.D. Excellent background. Fifteen years responsible research, teaching, diagnostic bacteriology and administrative experience in colleges, universities and hospitals; 10 years TB research; 7 years director of research. Desires teaching and/or research position, preferably in medical school, or position as bacteriologist in charge, chief or director of research in some area of medical bacteriology, preferably TB. Address: A-253.

• **CLINICAL RESEARCH:** M.D. presently engaged in experimental and clinical research into the hemodynamic problems of hypertension. Located now in England, English training. Interested in extending experience by working in a research unit in the U.S. Address: A-254.

• **PHYSIOLOGIST:** M.B.B.S., M.Sc. (med.), 32, Indian. Hold teaching and research position (8 years) as lecturer in physiology. Possess special training in nutrition researches. Publications. Desire postgraduate studies in physiology leading to Ph.D. Prepared to work on stipend or fellowship in any capacity. Address: A-255.

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